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ABSTRACT

THIS PROGRAM OF INSTRUCTION (POI) PROVIDES A TRAINED "SPECIALIST IN CONTINUING EDUCATION" (SCE) WITH A SERIES OF TESTED ACTIVITIES AND ALTERNATIVES THAT HE MAY UTILIZE IN A 6-WEEK TRAINING PROGRAM OR IN VARIOUS PROGRAMS IN HIS LOCAL SITUATION. IN THEIR OWN PROFESSIONAL SITUATIONS, THE SCE'S TRAINEES ALSO MIGHT FIND SOME OR ALL OF THIS MATERIAL APPLICABLE. THE POI HAS BEEN USED EFFECTIVELY IN THE FOLLOWING TYPES OF SITUATIONS: COMMUNITY INVOLVEMENT, CURRICULUM DESIGN, INSERVICE TRAINING FOR INSTRUCTORS AND ADMINISTRATORS, NEEDS ASSESSMENT, OPERATIONAL PLANNING, PROBLEM SOLVING, STAFF WORK-TEAM DEVELOPMENT, AND TEACHER-STUDENT INTERACTION. THE USER MUST SELECT ACTIVITIES FROM THE POI THAT WILL ACHIEVE THE SPECIFIC RESULTS HE INTENDS TO ATTAIN IN A GIVEN SITUATION. UNLESS HE PERCEIVES SPECIFIC NEEDS AND FORMULATES GOALS, THE POI OFFERS HIM FEW IF ANY TOOLS FOR HIS TASK. VOLUME I CONTAINS FOUR OF THE SIX MAJOR SECTIONS. INCLUDED ARE (1) GOAL ESTABLISHMENT METHODOLOGY, (2) DATA COLLECTION, (3) SELF-CONFRONTATION, AND (4) RESOURCE-SEARCH METHODOLOGY. VOLUME II (EA 002 705) CONTAINS MATERIAL PERTINENT TO (1) GROUP FUNCTIONING AND (2) OPERATIONAL DESIGN. (AUTHOR/DE)

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PROGRAM OF INSTRUCTION (POI)

Program I:

SPECIALIST IN CONTINUING EDUCATION

(Volume I)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

As a document complementing the Conceptual Base for the development of the Specialist in Continuing Education Program, this Program of Instruction (P.O.I.) provides a trained SCE with a series of tested activities and alternatives that he may utilize in a six-week training program or in various programs in his local situation. In their own professional situations, the SCE's trainees also might find some or all of this material applicable.

The P.O.I. has been used and considered effective in the following types of situations:

Community involvement
Curriculum design
Inservice training for instructors and administrators
Needs assessment
Operational planning
Problem-solving
Staff work-team development
Teacher-student interaction

HOWEVER -- this manual of training alternatives MUST NOT BE USED LIKE A TRADITIONAL TEXTBOOK TO BE SEQUENTIALLY AND COMPLETELY COVERED.

Like a bag of tools or the physician's "little black satchel", the P.O.I. contains appropriate strategies and effective techniques for dealing with localized needs and identified problems. Consequently, the user must select activities that will achieve the specific results he hopes and needs to attain in a given situation. But unless he perceives specific needs and formulates attainable goals, the P.O.I. offers him few if any tools to accomplish his task.

In scheme and substance, the Program of Instruction encompasses six major sections respectively complementing components of the Basic Program Plan's conceptual base:

VOLUME ONE

I Goal Establishment Methodology
correlates with
"Instructional Objectives in the Changing of Professional Behavior"

II Data Collection
correlates with
"Feedback Theory as It Relates to 'Changing Teacher Behavior'"

III Self-Confrontation
correlates with
"Self-Confrontation of Teachers"

IV Resource-Search Methodology
provides material to encourage professionals in locating and securing resources to increase substantive input for a new behavior.

VOLUME TWO

V **Group-Functioning**

correlates with

"An Analysis of Group Support and Helping Structures"

VI **Operational Design**

offers activities to familiarize a trainee with the concept and operational strategies, procedures and techniques to:

Assess needs
Develop strategies to meet identified needs
Collect data
Develop and test alternatives
Modify alternatives

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I. GOAL ESTABLISHMENT METHODOLOGY

A. Rationale

1. Definition

The process of stating in behavioral terms the outcomes expected by the learners, and the methods used to achieve these outcomes is called goal establishment. It also includes the provision for detailed specifications for the construction and use of evaluation techniques.

2. Attitudes, Knowledge, Skills

In order to recognize, identify and state a behavioral goal, the learner must be able to implement the following procedure: First, identify the terminal behavior -- the behavior you would like your learner to be able to demonstrate at the time your influence over him ends -- by name. We can then specify the kind of behavior which will be accepted as evidence that the learner has achieved the objective.

Second, try to further define the desired behavior by describing the important conditions under which the behavior will be expected to occur.

Third, specify the criteria of acceptable performance by describing how well the learner must perform to be considered acceptable. To test whether a written objective clearly defines a desired outcome, ask the question, can another competent person select successful learners in terms of the objective so that you, the objective writer, agree with the selections.

Once an objective is written, how does one test for clarity and completeness?

Does the statement describe what the learner will be DOING when he is demonstrating that he has reached the objective?

Does the statement describe the important CONDITIONS (given and/or restrictions) under which the learner will be expected to demonstrate his competence?

Does the statement indicate how the learner will be EVALUATED? Does it describe at least the lower limit of acceptable performance?

Inherent within the goal establishment concept is the necessity to specify the method of assessing resultant teacher and learner behavior.

Once a model has been established in operational terms, the appropriate system for collecting data or making systematic observations must be selected. The system or data collection is ordinate to the establishment of the model. By this it is meant that the teacher must first establish a model in operational terms and then locate or create the appropriate system.

The leader must know and use techniques for obtaining the involvement of all participants of a seminar in helping an individual teacher develop a goal. These techniques would include such things as the problem solving process, brainstorming, etc. It is important, however, to remember that in the confrontation approach, the goal that is established is always the goal of the individual teacher and not that of the seminar group. Therefore, in any process, where a group helps a teacher develop a goal, the individual teacher must always maintain the right to accept or reject a group-constructed goal or any portion of it.

3. Why Goal Establishment

Since the purpose of the training core is to improve the quality of teaching and improvement implies a specific change, the establishing of goals from both the teacher's and the leader's points of view becomes significant. From the teacher's point of view, he needs to define the goal so that he knows exactly where he is going. The teacher, therefore, has a data collection system which will allow him to collect data showing him how close to his goal he has come. It is the comparison of this objective data with the explicit statement of goal that will induce change -- either by re-orientation of the goals or the changing of the procedures for reaching that goal.

Stating goals in behavioral terms is significant for the leader as he too will then be able to assess his effectiveness by comparing collected data with his stated goal.

Within the concept of goal establishment methodology is the fact (see Conceptual Base) that a goal statement by the goal setter is a motivation for achievement of that goal. The greater the commitment to the goal the greater the amount of dissonance resulting from data which is contradictory to the goal. The greater the amount of dissonance, the greater the predictable change.

4. Conceptual Presentation

By means of a lecture in a general session, a resource person will present an overview of goal establishment methodology. Following this presentation, resident staff members will demonstrate significant aspects of goal establishment in a role-playing situation. These activities will be supplemented by recordings, handouts, and other printed material located in the Search Area. Participants will begin to recognize and identify behavioral goals as they participate in these activities. Subsequently they will gain further skills, i.e. stating goals and instructing others to state behavioral goals as they practice in the daily seminar. During the seminar the leader will question the teacher regarding the attainment of the teacher's goal. He will effect this inquiry by helping the teacher to state his goal, to look to the data collected by the observer, to analyze the relationship of the data to his stated goal and finally to offer help to the teacher in setting up a goal for the following day. It will be within this framework that the leader will obtain practice in helping or instructing others to put their goals in observable terms.

5. Evaluation

Evaluation of goal establishment will occur in three ways: (1) a critique by a staff member of the leader's behavior during the confrontation involving the teacher and data collected regarding the teacher's goal; (2) an analysis of teacher and leader goals extracted from tape-recorded seminars and from goal-planning sheets handed in by the leader and the teacher; and (3) charted progress of each participant as evidenced by an overall achievement test with specific questions on goal setting.

In order to ascertain whether or not a participant demonstrates the ability to instruct others in setting a behavioral goal, the staff member will observe the participant in his roles as leader and as teacher. By observing the supportive questions asked, by leader or teacher, the lack of subjective judgment, the assistance he gives in resolution of group problems, and the criteria of teacher and pupil behavior explicitly stated, the staff member will evaluate the ability of the leader or the teacher. The criteria for teacher and pupil behavior will explain the actions that will take place in order to reach the stated goal. Another means by which a participant will demonstrate his ability to instruct others in establishing behavioral goals will be to examine data from follow-up programs to be conducted within participant's home environment.

B. Training Alternatives

1. Conceptualizing Activities

Resource Material

Purpose:

To obtain resources on Goal Establishment Methodology.

Materials:

Duplicating equipment.

Participants:

Total Group.

Time:

To be determined by leader.

Agenda:

1. Give group an assignment to bring back to the group a series of resource materials that they have heard of, read, or can find on "Goal Establishment Methodology".
2. Compile a list and circulate to all participants.
3. Discuss process.

SCE Establishes, Carries Out, and Shares His Goal with the Group.

Purpose:

1. To give the group an example of a behavioral goal.
2. To give the group an example of a type of data collection appropriate to the stated goal.
3. To show the group that the SCE is willing to assess his behavior with them and therefore, help to set the atmosphere for self-confrontation.

Materials:

1. SCE's written goal statement.
2. Copies of leader's data.

Participants:

Total Group.

Time:

Length of seminar session in which SCE carries out goals, plus 1 hour for examination and discussion of data.

Agenda:

1. SCE defines his goals for seminar session in behavioral terms.
2. SCE conducts seminar session with revealing his goals to the group.
3. After the seminar, the SCE shares his goals and reasons for selecting these goals with the group. He may also want to explain the steps he went through to define the goal in behavioral terms.
4. The SCE then shares the data with the group and relates his feelings concerning goal attainment. He may want to involve the group in helping him compare the goals with his actual behavior.

Use Film or Video Tape of Classroom Situation. Participants determine what Goals were -- Would Be.

Purpose:

In order to realize the readiness to continue in an activity, the participant must feel the need to continue. It is felt that the introduction of tape or film containing actual classroom situations might be used in the readiness step of the program.

The films could be of varied length with different situations portrayed. They could be of "desirable" teacher behavior as well as behavior considered "less desirable".

According to Mager, a behavioral goal, where properly stated, should be attainable by a person other than the person setting the goal. It is felt that this activity will further the setting of clear behavioral goals and re-direct the tendency to make ambiguous statements of utopian behavior.

Materials:

1. Video tape recorder and monitor (or movie projector and screen).

2. Video tapes of actual classroom situations (or films of some).

Participants:

As assigned to specific program.

Time:

As required by specific program (2 hours required).

Agenda:

1. Each participant could examine the situation presented and would be asked to tell what he feels the goals of the goal-setter are in each instance, he could also tell what his goals would be under identical or similar circumstances, he may compare his determination of performance goals with actual goals set by demonstrator.

2. In the implementation stage of goal setting, the participant will get a chance to evaluate his own behavior by viewing a film or tape of his performance and examining his goals.

   He may also act as observer to determine the effectiveness of goal achievement in light of the goals set by others.

Guess Leader's Goals

Purpose:

Give participants an opportunity to see if they can determine what a leader's goals were based, on the leaders performance.

Materials:

Blackboard or newsprint and marking pens.

Participants:

Total Group.

Time:

1 hour.

Agenda:

1. Have leader write behavioral goals for any type of session and try to be successful in their attainment.
2. After a pre-determined period of time, (based on the goals and the session) have participants try to guess what the goals were.
3. This could be done with a yes/no or short answer technique.

Setting Goals for Others and Implementation by Self

Purpose:

1. To introduce the participants to setting goals in operational terms.

2. To explore feelings encountered by having to try to achieve the goals set.

Materials:

Paper and pencils.

Participants:

All

Time:

2 hours.

Agenda:

1. Each individual is requested to write a goal in behavioral terms for another person in the group, or outside. (If this is too threatening, they could write a goal that they think all teachers, etc. should follow.) (15 minutes)

2. Then the group or each individual could discuss how this goal could be implemented. (30-45 minutes)

3. Then tell each person he is to try and attain this goal in his own classroom, (or it could be role-played or mini-experienced). (5 minutes)

4. At this time, it could be discussed how they felt about implementing the goal they wrote for someone else, themselves. The differences between having someone else setting goals for you and setting goals for yourself. (30-45 minutes)

5. Try to achieve the goal set -- in a role-play, mini-experience, or actual classroom.

Needs Analysis Session

Purpose:

1. To familiarize groups with needs assessment techniques.
2. To have groups identify 3 or 4 of their more pressing needs.

Materials:

Blackboard or newsprint, paper, pencils, and ditto paper for quick reproduction of lists to be generated.

Participants:

Groups of 8 to 10.

Time:

2 hours.

Agenda:

1. Brainstorm possible areas that a group feels they have problems in. (Time - 15-20 minutes)
2. Compression of brainstorming ideas into 3 or 4 of major importance. These 3 or 4 could also be put into priority ranking. (Time - 20 minutes)
3. If more than 1 group is used, the lists from the various groups could be combined and/or compressed. (Time - 20 minutes)
4. The resulting list can be used as a base for developing behavioral goals for each need of problem statement.
5. 2 or 3 questions from the group might be generalized for each point on the list.
6. Discussion of the process with total group. (Time - approximately 30 minutes)

2. Application Activities

Diagnostic Test

Purpose:

To give participants insight on their ability to identify and/or write a behavioral objective.

Materials:

Mager's Self-Test, paper, and pencils.

Participants:

Total group to be divided up into pairs or triads.

Time:

1 hour.

Agenda:

1. Administer Mager's Self-Test.
2. Have individuals correct tests.
3. Divide total group into pairs or triads to work on preparing instructional objectives. Use people who scored high as resources for those who scored low.
4. Total group together to discuss process.

Redefinition of Vague Goal

Purpose:

1. To point out the lack of agreement or success in gathering data relevant to the achievement of a vague goal.
2. To point out the variety of ways a vague goal might be interpreted.

Materials:

Paper, pencils, newsprint, and marking pen.

Participants:

Total Group.

Time:

45 to 60 minutes.

Agenda:

1. Give the group a vague goal such as, "to develop an appreciation of literature".
2. Have each person write down what he would record as an observer of a teacher who wanted data on achievement of this goal.
3. Collect and record the types of data that would be collected, drawing attention to the variety.
4. Have the group brainstorm on the possible interpretations of this goal.
5. Then have them redefine the goal in behavioral terms for several of the interpretations.

Identification of Behavioral Goals

Purpose:

1. To encourage definition of specific behaviors.
2. To establish criteria for acceptable goals.

Materials:

Paper and pencils.

Participants:

Total Group.

Time:

As required by specific program.

Agenda:

1. Have group establish what they would consider the criteria for a well defined behavioral goal.
2. Each group member write a goal that he thinks would meet the criteria.
3. Pass all written goal statements around the group for each person to react to. Each person who reads the goal would indicate whether or not he thinks the goal meets the criteria.
4. Group should decide how many people have to accept the goal for it to be acceptable to the group. (For example, the goal must be accepted by 80% of the group members for it to be acceptable to the group.)
5. At the conclusion of this task, the group may want to discuss the activity and/or to reconsider the criteria they established.

Determination of Goals Outside the Educational Field

Purpose:

1. To expose participants to the goals of other areas of interest. (Art, Music, etc.)
2. To motivate the individual participant to examine what his goals would be under certain conditions.
3. To give exercise in setting behavioral goals.

Materials:

Objects to be presented; picture, record, any object or example chosen by leader.

Participants:

All those in seminar session.

Time:

Varies with examples chosen.

Agenda:

1. Present stimulus (literary passage, work of art, recording).
2. Ask participants to write feelings upon experiencing stimulus.
3. Ask participants to write behavioral goals centered around their reactions.
4. Ask participants to tell how they would accomplish same effect.
5. Have them write their own behavioral goal for that effect.
6. ROLE PLAY THE SITUATION: Now the rest of the class becomes the audience. Seek spontaneity in presentations. Encourage role players to depart from previously thought out lines to improve the total effect while staying within the character of the role player himself. THE LEADER SHOULD STRIVE NOT TO INTERFERE WITH THE

PARTICIPANTS. If the presentation begins to lag, stop it even though it has not proceeded to a logical stopping place.

7. DISCUSS THE PRESENTATION: The presentation may be discussed by the entire class, first in buzz groups and then by the entire class. Encourage them to locate the strengths and weaknesses in arguments of participants. Have them come to some conclusion about what they think might be a proper course of action. No effort should be made to get uniform acceptance of one opinion by all members of the class, however. At this point, ask the group to evaluate the role-playing situation itself and lay out plans for carrying out related activities.

8. AUDIO-VISUAL INSTRUCTION MATERIALS AND METHOD, Beacon, Lewis, Harcleroad.

Text Use

Purpose:

1. To give participants cognitive input on preparing behavioral goals.
2. To give participants practice in identifying behavioral goals.

Materials:

1. Text, Mager's "Preparing Instructional Objectives", 1962.
2. Paper and pencils.

Participants:

Individuals.

Time:

Varies with reading ability of individual.

Agenda:

1. Each person should read Mager's programmed text at his or her own rate of speed.
2. Each individual should complete the self-test at the back of the book.
3. Groups of participants should get together to compare and discuss what they have read and how it might be used in their own situation.

Group Ranking of Behavioral Goals

Purpose:

1. To assist participants in recognizing goals that are stated specifically.
2. To provide practice in redefinition of vague goals.

Materials:

Paper, pencils, newsprint, and marking pens.

Participants:

Total Group.

Time:

Approximately 1 hour.

Agenda:

1. Have each participant write a behavioral goal on a slip of paper.
2. SCE record all goals on large sheet of newsprint for total group to read.
3. Have group rank goals from most to least behaviorally stated.
4. Select 2 or 3 of the least behavioral goals and have the group restate them in more specific terms so that they are acceptable to the whole group.

Goal Setting

Purpose:

To demonstrate and practice goal setting.

Materials:

Pencils and paper for participants.

Participants:

A seminar group of 6-8 people is required for this activity.

Time:

As dictated by program schedule (2 hours minimum).

Agenda:

1. One member of the group volunteers to be the subject and leaves the room. The role of the subject involves participation and observation in a seminar in which one of the other participants has set a goal which is unknown to him. He does not know by whom the goal has been set nor the content of the goal. His task is simply to participate in the seminar.

2. The remaining members of the group are composed of one member who will set a behavioral goal (to work within the content of the seminar) and the other group members who will observe the process involved and the techniques used by the member attempting to achieve the goal.

3. After a session of specified length, the group members will examine the goal, behavior of subject and goal setting member and reactions to activity.

Participants Attempt to Set Goals for "canned" Situations which Leader Provides

To enable the participants to practice goal setting, the seminar leader may wish to utilize some practice situations which will provide them with common ingredients to consider. It also provides a quick way to get the group started in goal setting activities.

Such situations should include a description of the type of group with which the participants will be concerned (teachers, students, etc.), the levels of development of the group (new teachers, kindergarten students, etc.), a brief background statement about the leader himself, the number of meetings that have been held (if any), and any significant developments that have come from the earlier meetings.

Too much detail should be avoided in the development of these situations, as an abundance of detail tends to restrict the participants' thinking.

Setting of Goals Based on Conflict Between Ideal and Real

Purpose:

1. To illustrate how previously collected data can be of help in goal setting.
2. To provide practice in goal setting based on specific data and situations.
3. To illustrate use of student feedback as a method of data collection.

Materials:

Data sheets (see attached copy), newsprint, and marking pen.

Participants:

Total Group.

Time:

30 minutes.

Agenda:

1. Provide data sheets for participants to read.
2. Have them compare and discuss the ideal and real responses. Sample questions are:

   On which items are there conflicts?
   If you were the teacher, how would you feel about this?
   Which items would you be most concerned about and why?

3. Ask participants to discuss the goals they might set for the next class session as a result of this data. Have them state these goals in behavioral terms.

HANDOUT FOR

Setting of Goals Based on Conflict Between Ideal and Real

This teacher was concerned about her use of praise and punishment in the classroom. Before asking the students to give their perceptions of her, she set her ideal for student responses on each statement. After looking at the students' real responses, what behavioral goals do you think the teacher might set?

My teacher:		always	most of the time	half of the time	seldom	never
... keeps changing the rules for punishment	ideal	0	0	0	5	30
	real	0	0	0	8	27
... praises the students when they do a good job	ideal	10	15	10	0	0
	real	2	3	16	9	5
... punishes the whole class for things that only a few of the class members do	ideal	0	0	5	5	25
	real	0	0	5	4	26
... picks on certain students	ideal	0	2	3	10	20
	real	1	3	1	12	18

Student Establishment of Teacher Goals

Purpose:

Have students in the class generate the teacher's goals for him.

Materials:

Furnished by leader.

Participants:

All

Time:

As required by specific program.

Agenda:

1. Content goals for the subject area:
    a. Provide students with books, etc., which contain "lists" of topics related to the content area.

    b. Have students complete a data sheet concerning his future vocational or academic plans (the sheet will have major areas of study or vocations listed on some section of it).

    c. Have student check a file for the folder related to a given area listed on the data sheet he has completed. The folder will list various high school or college pre-requisites and various businesses' pre-requisites for certain jobs in the area (e.g., a proof reader in a publishing company).

    d. Students will then be grouped by core areas and then they will design from the materials and human resources, a course of study which the teacher will then carry out.

    e. The teacher will design specific content activities so that the students' goals may be achieved.

2. Teacher behavioral goals:

   a. The teacher will provide the students with various questionnaires, checklists, etc., which have been used to gather information on a teacher's behavior.

   b. From these "models" and group resources, the students will develop a method for gathering data on the teacher's behavior.

   c. From these same "models" and group resources, the students will develop a method for gathering information on their own behavior in the class (or more realistically, the group of six students who are working together).

   d. Have representatives (2) from each group meet as a new group to synthesize the ideas each group has developed.

   e. Apply the method and have students tabulate the teacher's results and have the teacher tabulate the student's results.

   f. From the data, have the students identify the areas in which the teacher ought to work.

   g. From the data, have the teacher develop some behavioral goals for the students -- as individuals or as groups.

   h. By using same form, have the students identify what behavior the teacher should have in order to improve the learning relationship.

Students Guess Teacher's Goal

Purpose:

1. To practice writing goals in operational terms.
2. To develop the methods or strategies used to achieve the goal.
3. To collect data to determine how close the teacher came to achieving the goal.

Materials:

Paper and pencils.

Participants:

All

Time:

1 - 15 minute session
1 - 1 hour classroom session
1 - 1 hour discussion session

Agenda:

1. Have the participants write a major goal for a classroom session in operational terms.
2. After the lesson has been taught, have the students write on paper what they thought the teacher's goal or reason for the activities of the period. (It may be necessary to give a hint, if it is other than teaching a specific content.)
3. Tabulate the student's answers and compare their guesses with the teacher's original.
4. Discuss the discrepancies.

Alternative Strategy:

Explain to the students the components of a goal being set in operational terms.

Selection of Behaviorally Stated Goals

Purpose:

1. To give practice in recognizing the components that are essential to goals being stated in Operational Behavioral terms.
2. To give practice in writing goals in behavioral terms.

Materials:

1. Record from Research for Better Schools. (R.B.S.)
2. Ditto copies of criteria necessary for goals to be stated in behavioral terms. (See attached)
3. List of goals -- some meeting all criteria -- others needing additional terms.

Participants:

All

Time:

15-20 minutes for playing of record from R.B.S.
Discussion of record from R.B.S.
1 hour to select behaviorally stated goals and re-write others.

Agenda:

1. Play record from R.B.S., telling terms necessary for goals to be stated in operational terms.
2. Discuss record and reasons for inclusion.
3. Hand out sheets to check if in operational terms.
4. Re-write other goals so they are stated in operational terms.

HANDOUT #1 FOR

Selection of Behaviorally Stated Goals

BEHAVIORAL OBJECTIVES AND THE SPECIFIC OBJECTIVES IN IPI MATHEMATICS

The teacher identifies behavioral objectives:

1. Selects objectives stated in terms of the learner doing or producing something.
2. Identifies that part of the statement which describes the action or product.
3. Identifies in the objectives the conditions for performance.
4. Identifies the mastery criterion contained in the objective.

HANDOUT #2 FOR

Selection of Behaviorally Stated Goals

DIRECTIONS: (1) Read the following goals; (2) Check the components that are stated for each goal; (3) Check the last column if all four terms are stated and the goal is stated in operational terms; (4) If the goal is not stated in operational terms -- re-write the goal so that the missing terms are included.

	The Learner	Observable Behavior	Conditions of Performance	Mastery Criteria	Operational Terms
1. To teach the important events occurring during the "Golden Age of England". RE-WRITE:					
2. Given a human skeleton, the student must be able to correctly identify by labeling at least 40 of the following bones: There will be no penalty for guessing (list of bones inserted here). RE-WRITE:					

	The Learner	Observable Behavior	Conditions of Performance	Mastery Criteria	Operational Terms
3. Given an otherwise properly functioning T.V. receiver, the learner must be able to adjust the ion trap. RE-WRITE:					
4. When presented with a form, the student must fill out a standard accident report. RE-WRITE:					
5. To identify a well-balanced breakfast given the foods to be eaten and amounts within 10 seconds. RE-WRITE:					

	The Learner	Observable Behavior	Conditions of Performance	Mastery Criteria	Operational Terms
6. To identify the 12 months and the seven days with 100% accuracy. RE-WRITE:					
7. To appreciate the beauty of 13th Century String Quartet Music. RE-WRITE:					
8. To state the causes of the Civil War in writing. RE-WRITE:					
9. To identify the five basic parts of plant. RE-WRITE:					

	The Learner	Observable Behavior	Conditions of Performance	Mastery Criteria	Operational Terms
10. The student must be able to spell correctly at least eight of the ten words called out to him during an examination period. RE-WRITE:					
11. The student must be able to use the chemical balance. RE-WRITE:					
12. To know plays of Shakespear. RE-WRITE:					

II. DATA COLLECTION

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II. DATA COLLECTION

A. Rationale

1. Definition

Data Collection, an inherent part of the scientific method, is the operation of securing reliable and valid information about a particular behavior. The scientific method involves designing research problems, collecting data, and analyzing the results.

2. Attitudes, Knowledge, Skills

The leader should understand data collection in terms of the scientific method and design of research problems.

As used in the program, science refers to a systematic method of establishing cause and effect relationships in order to predict or control. The following are common elements in the scientific method:

Defining a meaningful problem
Identifying relevant variables
Searching the literature
Formulating a hypothesis
Collecting data
Analyzing data
Interpreting results
Generalizing finding

Certain components of the scientific method are handled in sections of the program other than in data collection. Defining a meaningful problem, identification of relevant variables and formulation of a hypothesis are all a part of goal establishment methodology. Analysis of the data, interpretation of the results and generalization of findings are handled in the confrontation section of the program of instruction. Search of the literature is handled in the resource section of the program.

There is a variety of evaluation instruments that a leader may use. The participant must not only be acquainted with these measures but should know and understand the advantages and liabilities of each instrument. Such a task will involve identifying the significant variables of each, comparing of similar instruments, and selecting the instrument or instruments that are most appropriate for measurement of the specific behavior.

Selection or adaptation of a specific data collection instrument in direct relationship to the immediate goal is a necessary skill the leader must possess. Some important criteria necessary to understand and identify the selection of an instrument are relationship, validity, and reliability.

Does it relate to the immediate goal or problem?
Is the instrument valid, or does it measure what it is supposed to measure?
Is it reliable or if other people observe, will they have similar observations?
Can the instrument be administered with relative ease?
If the instrument is a pencil and paper test, is the language appropriate for the population to which it is being administered?

The leader should be capable of inventing methods of data collection in order to fulfill a specific need. This might entail the combinations of several instruments or the invention of a specific design.

The leader must not only know and be able to use data collection methodology but he must be able to motivate others to learn these skills.

The leader must be able to operate audio visual equipment sometimes used in data collection.
The leader must understand the merits and limitations of the equipment he learns to use.
The leader must be able to instruct others in the use, maintenance, and operation of such equipment.

3. Why Good Data Collection

The leader of continuing education will function as a change agent, who in this case is a person who helps another person define where he is in relation to his goal. The concept of data collection is inherently a part of the inservice leader training program because collection of objective and reliable data gives the teacher the opportunity to see where he is so he can relate where he is to his specified goal.

4. Conceptual Presentation

Initial statements will elaborate the reasons for data collection as part of the leader program. This explanation will also include the concept of the relation of data collection to a given goal or problem and the necessity for this relationship. Other emphases will include the following: (1) the notion of valid data, which means that the instrument measures what it is supposed to measure; (2) the notion of reliability or objectivity in that the data collected by one observer can be collected by more than one with high correlation; and (3) the practical aspect of collecting data -- making the collection and scoring less cumbersome. Given the points above, the group will be presented with a problem or goal and asked to brainstorm some possible ways of collecting data that would be, (1) reliable, (2) valid, and (3) easy to use.

5. Evaluation

Participants will be asked to create their own instruments and defend them within the group while using the criteria of reliability, validity and usability.

Within the seminar, the leader will practice teaching data collection instrument development for specific problems of the teachers. He will work on teaching others to put together new approaches and new combinations of approaches. He will learn to adopt data collection techniques to the goals.

The search area will contain the following to supplement the above experiences with data collection:

Books and articles on specific data collection techniques.
Examples of various data collection instruments such as: (a) achievement tests, (b) student-teacher rating scales, and (c) attitudinal scales.
Programmed instruction material on systems of interaction analysis.
Books on the scientific method.

B. Training Alternatives

1. Conceptualizing Activities

Have Participants View Film "Eye of the Beholder"

Purpose:

This activity is designed to draw attention to the lack of validity of subjective observation and the need for objective methods of collecting data.

Materials:

Film: "Eye of the Beholder"

Participants:

Determined by S.C.E.

Time:

Determined by S.C.E. (film is approximately 20-25 minutes).

Agenda:

1. Have participants view film.
2. Discuss differing perceptions of person in film.
3. Discuss implication of relying solely on perception of others for collecting data and what might be alternative.

Subjective Description of Teacher Behavior

Purpose:

To demonstrate differences that occur in perceptions of a teacher from different viewpoints.

Materials:

Video tape, newsprint, felt pens, and handout.

Participants:

All

Time:

1 hour.

Agenda:

1. Show a ten minute video tape of a teacher teaching.
2. Present written descriptions of the teacher by (a) the principal, (b) other teachers, (c) students or parents.
3. Discuss reasons for the differences in perception and can they be compared?

HANDOUT FOR

Subjective Description of Teacher Behavior

Introduction:

Often the only feedback teachers receive are in general terms made by various people. Compare these perceptions of the same teacher.

Superintendent:

This teacher is an excellent professional, she is involved in many extra-curricular projects and is currently obtaining her masters.

Principal:

This teacher is an excellent professional. She is a leader and often takes the initiative in learning about new teaching approaches which she not only introduces into her classroom, but to other professionals. She has excellent discipline. Her bulletin boards and general classroom appearance are exciting.

Other Teachers:

This teacher is involved in many new ideas and activities. She is an exciting person who is involved in many activities in the community, as well as professional. She can always be counted upon to start a project.

Parents:

What an involved person, she can always be counted upon to help with Girl Scouts or a Church project. She gives so much of herself and her time. Sometimes my child complains about her being too rough, but my child needs to be told how to behave.

Student:

She is always yelling at me, and I really don't know why. My pencil was broken, so I went to sharpen it -- she yelled at me and made me stay after school.

She never lets us do any fun things. Even the experiments are dull -- she does them herself or sometimes she'll let one of her "pets" do it for everyone. Last year we got to do our own. She always is doing everything for us -- we're not babies anymore.

Which Teacher Is Wearing The White Hat?

Purpose:

To demonstrate the need for specific data or a system of analysis in order to evaluate successful achievement of a goal.

Materials:

Video tape presentation and video tape recorder.

Participants:

All

Time:

1 hour.

Agenda:

1. Present two 5-10 minute video tapes of two teachers with the same goal, but different behavior. A goal could be to be accepting of all student suggestions.
2. Have the group discuss which teacher was more successful in achieving her goal.
3. The group lists the reasons why they felt each teacher was or was not successful.
4. The group votes on whether they, as individuals, agree with the statements.
5. Brainstorm ways a more objective and reliable method for determining if she was successful -- selective brainstorming -- emphasizing the need for a system of data collection.

Explore Use of Data Collection Outside of Education -- i.e. Business, Industry, etc.

Purpose:

To demonstrate the importance of data collection and its examination of the data in relation to determining alternative courses of action in fields outside of education and to determine what implications it has for education.

Materials:

Determined by S.C.E.

Participants:

Determined by S.C.E.

Time:

Determined by S.C.E.

Agenda:

Discussion of previously mentioned subject in respect to its implication to the use of data collection for education.

Interaction Systems and Other Systems

Purpose:

To acquaint the participants with systems of collecting data about classroom behavior.

Materials:

Newsprint, felt pens, programmed material on C.V.C., Flander's learning materials, handout on development of CVC., Mirrors of Behavior (describes several systems, file of instruments, student-teacher rating scales).

Participants:

All

Time:

Independent study time 1/2 hour formal presentation.

Agenda:

1. 1/2 hour presentation briefly describing C.V.C., Flanders, and other systems of collecting data such as, student-teacher rating scales, achievement tests, etc.
2. Search-area time scheduled for independent study to examine and learn systems of individual's choice.

Group Brainstorming on Methods of Data Collection

Purpose:

1. To involve participants in exploration of the variety of systems that can be used.
2. To prevent participants from thinking of one method as "the method" of data collection.

Materials:

Newsprint and marking pen.

Participants:

Total Group.

Time:

15 minutes.

Agenda:

1. Establish ground rules for brainstorming.
2. Ask participants to brainstorm on any methods of data collection that might be used in connection with their in-service work.
3. Group may want to discuss their list of ideas or categorize the types of things they have listed.

Exploring Data Collecting Techniques and Their Application

Purpose:

To determine a variety of data collecting techniques and their application to established goals.

Materials:

None

Participants:

Determined by S.C.E.

Time:

Determined by S.C.E.

Agenda:

1. Brainstorm all possible suggestions of how data might be collected.
2. Determine the objectivity of each brainstorming item.
3. Discuss the broadest possible usage for each objective data gathering technique.
4. Selecting a specific goal, discuss the usage of as many data gathering techniques in respect to that goal.

Group Decides on Methods of Data Collection That Could Be Used by Reader

Purpose:

1. To illustrate the variation in subjective judgments and thus point out the need for objective methods of data collection.
2. To begin exploration of various methods of data collection.
3. To let participants know that the leader is open to feedback on his own behavior in the group.

Materials:

Newsprint, marking pen, no other materials are necessary unless the leader wants to hand out copies of his goals.

Participants:

Total Group.

Time:

30 minutes.

Agenda:

1. At the end of a session, the leader shares one of his own goals with the participants and asks for their opinions concerning his success.
2. The leader should record all comments that are made so that any conflict in opinion is evident. Discussion may follow.
3. The leader then asks the group for methods of collecting more objective data on his behavior.

Selection of an Appropriate Data System

Purpose:

To give practice in selecting appropriate system of collecting data.

Materials:

Handout, newsprint, and felt pens.

Participants:

All

Time:

1 1/2 hours.

Agenda:

1. Distribute handout and give time to read.
2. Talk about what specific type of systems could be used in the method of evaluation column.
3. Have individuals volunteer some typical behavioral goals; and the group brainstorm possible systems of data collection.
4. Of the systems brainstormed, have the group list positive and negative factors in terms of appropriateness for the specifically stated goal.

2. Application Activities

Practice in Observer Role

Purpose:

To familiarize participants with data gathering techinques and to develop a proficiency in their use.

Materials:

Determined by S.C.E.

Participants:

Determined by S.C.E.

Time:

Determined by S.C.E.

Agenda:

The S.C.E. may provide as a part of the program opportunities for the participants to act as observers in (1) role playing situations; (2) micro-teach situations; or (3) classroom situations. They may also work with either audio or video-tape episodes that are available to the S.C.E.

S.C.E. Perform Task for Participants to Observe Stated Goals

Purpose:

Practice application of data gathering techniques in relation to specific goals.

Materials:

Determined by S.C.E.

Participants:

Determined by S.C.E.

Time:

Determined by S.C.E.

Agenda:

1. S.C.E. inform participants of task to be performed and goals to be measured.
2. Design activity to include several subjective techniques.
3. S.C.E. perform activity.
4. Discuss the value of data gathered (objective vs. subjective).

Introduction to Idea of Collecting Data on Classroom Behaviors through Illustration of Pupil Talk - Teacher Talk

Purpose:

To introduce subject of data collection on classroom behavior.

Materials:

Pencils and paper for participants.

Participants:

As assigned to program.

Time:

As dictated by specific program schedule.

Agenda:

1. Appoint group observers to collect data about leader -- leader makes objectives available only to observer prior to seminar.
2. After or at end of seminar, observer gives data to leader and group -- 2 observers could compare data.

Alternate Agenda

1. During initiation phase of goal setting in a group experience, participants could devise data instruments to collect evidence of group or individual behavior.
2. Participant gives demonstration to group who role-play a group of students -- after demonstration.
3. Group members devise data collection instrument which will measure the measurable components of the stated objective.
4. Completed instrument is given to demonstrator to reflect on performance - objective - data.

5. Participants should be introduced to CERLI Matrix by means of chalk-talk illustration - written materials (programmed approach).

6. Participants introduced to Flander's interaction analysis instrument by chalk-talk illustration - written materials.

7. Participants should learn to use various types of tape recorders and video-tape recorders (if available).

8. Participants learn to coordinate use of several data collecting instruments in obtaining evidence of meeting behavioral objectives.

Comparing Systems in Terms of Reliability

Purpose:

To have participants consider systems of data collection in terms of reliability.

Materials:

Video tape, newsprint, felt pens, and handout.

Participants:

All

Time:

1 hour.

Agenda:

1. Distribute handout recording sheets and explain and implement the following procedure:
    a. Viewing of 10 minute classroom.
    b. Divide into two groups: Half of the group classifying behavior according to number of questions asked by teacher and students, and the other half according to number of productive thinking statements made by teacher and students.
    c. Compilation of group tallies in terms of percentage.
    d. Comparison of the two groups data.
2. Brainstorm goals for which each system would be appropriate.
3. Discuss in which cases either system could be used, and where only one system would be valid.

HANDOUT FOR

Comparing Systems in Terms of Reliability

	Student	Teacher	
Questions Asked			Total # of questions asked _____
Other			Total # of other _____

Total # of statements made _____

Of Total Talk

Number of student questions _____ _____%

Number of teacher questions _____ _____%

Total number of student statements _____ _____%

Total number of teacher statements _____ _____%

	Student	Teacher	
Productive Critical Thinking			Total # of P.C.T. _____
Other			Total # of other _____

Total # of statements made _____

Of Total Talk

Number of student P.C.T. _____ _____%

Number of teacher P.C.T. _____ _____%

Total number of student statements _____ _____%

Total number of teacher statements _____ _____%

Brainstorming on Methods of Data Collection

Purpose:

1. To consider more than one method of collecting data in a specific case.
2. To examine the use of a specific data collection system in terms of reliability, validity and function.

Materials:

Newsprint, felt pens, and handout.

Participants:

All

Time:

1 1/2 hours.

Agenda:

1. Half hour to distribute handouts on questions to consider on research procedures. Assign each section to a small group of 2-4 persons to read, discuss in terms of data collection, and prepare a brief synopsis (5 min.) to present to the entire group -- Sections: 1) Controls in the Research Procedure; 2) Opportunities for Discovery; 3) Appropriateness of Experimental Design; 4) Reliability and Precision of Measurement; 5) Validity and Choice of Measures; 6) Appropriateness of Statistical Description and Analysis; and 7) Interpretation of Results.
2. Brainstorm specific data collection systems in terms of a given goal.
3. Distribute handout on Checklist of Questions.
4. Rate each system in terms of reliability, validity, appropriateness and ease of use.

HANDOUT FOR

Brainstorming on Methods of Data Collection

Checklist of Questions

22. RELIABILITY AND PRECISION OF MEASUREMENT

(a) What is the evidence in support of the reliability of every set of observations or measures used in the research?

(b) If reliability has not been established in previous research, how will it be evaluated in the proposed study?

(c) Is the researcher aware of any special problems of reliability that might be involved in his proposed research?

(d) Is the precision of the measurement procedures consistent with the intent of the research?

23. VALIDITY AND CHOICE OF MEASURES

(a) What is the evidence of validity of every measure used? If the measure has been used in previous work, what is the evidence of validity in the literature? If the measure is developed for this specific research, what evidence of validity will be obtained?

(b) Are there other measures that might better be used?

24. APPROPRIATENESS OF STATISTICAL DESCRIPTION AND ANALYSIS

(a) Is an appropriate statistical description and analysis of the results made explicit?

(b) When appropriate, are alternative ways of analyzing the data suggested?

(c) Are the assumptions involved in the statistical analysis recognized, and are the data likely to meet these assumptions? Is the investigator aware of possible problems in the statistical analysis?

(d) At each step in the proposal, as in determining the size of the sample, for instance, or as in constructing the research design, have the appropriate statistical considerations been made?

25. INTERPRETATION OF RESULTS

Can various kinds of possible results be interpreted meaningfully? Can positive findings be integrated with previous research and theory? Can negative or null results be interpreted in a way which contributes to knowledge in the field? Would negative or null results make a difference in the area of investigation, in theory or practice?

A GUIDE FOR EVALUATING RESEARCH PLAN IN PSYCHOLOGY AND EDUCATION
By: Joel R. Davitz, Lois Jean Davitz
Teachers College Press
New York, 1967

Still another aspect of scientific inquiry is the stress on objectivity, which in one important sense means that other trained observers can repeat the procedures of a reported research to determine whether or not essentially the same results are obtained. Replicability, therefore, is an important characteristic of every research, for it is replication by others that affords a major way of establishing objectivity and testing the reliability of findings. Thus, the methods and procedures of a research must be specified in enough concrete detail so that others can repeat the investigation.

19. CONTROLS IN THE RESEARCH PROCEDURE

Are the controls in the research procedure adequate, appropriate, and clearly specified? Are there any "incidental" features of the procedure which might bias the results and contaminate an interpretation of the data? Does the research plan take into account the subjects' possible expectations, sets, and interpretations of the research procedure? Has the investigator taken into account the possible influence of his wishes and expectations?

An eventual aim in any line of scientific inquiry is to achieve knowledge of all the variables that influence a particular phenomenon. The history of inquiry in any field of research is typically characterized by increased control of relevant variables as the research moves from early descriptive studies to more refined experiments. In the psychology of learning, for example, the results of early studies were often confused by the effects of uncontrolled variables of which the experimenters were unaware. Gradually, as a consequence of numerous investigations, many of these variables were identified and controlled in subsequent research. The sensitivity of experiments in this field, or the accuracy with which predictions could be made and tested, was substantially increased over time. In designing his research procedures, therefore, an investigator is responsible for identifying relevant variables on the basis of theory and previous research, and designing adequate controls for these variables.

As research progresses in any field, it is not uncommon for investigators to recognize that some aspects of their research procedures which heretofore had been considered "incidental", had, in fact, a significant influence on the results obtained. For example, if one is collecting data using a projective technique, it would be important to remember that the sex of the person administering the stimulus materials influences the responses that are elicited. The fact that a study is conducted in a school setting, in a laboratory, in a home, or in a local coffee shop can well be an important determinant of the results. The role of the investigator in relation to those who serve as subjects, whether he is teacher, friend, parent, or colleague, is also likely to make a difference in the data. In short, no aspect of the procedure can be considered "incidental" and irrelevant without careful consideration, and whenever possible, empirical investigation.

An important source of uncontrolled variance in some studies might be the subjects' implicit reactions during the research. Many people are likely to come into a study with some hunches or hypotheses about the purpose of the research, and they are also likely to develop some implicit interpretation of the procedures as they take part in them. Inasmuch as these hypotheses and interpretations influence behavior, they must be taken into account in planning research as well as in interpreting the results.

Another souce of uncontrolled variance involves the researcher's own implicit wishes and expectations. The influence of these factors on the outcomes of research has been demonstrated dramatically in a series of recent investigations reported by Rosenthal (1964). Although the methods of scientific investigation must be objective and unbiased, it would be absurd in most cases to picture the scientist himself as a totally unbiased and objective machine. Of course, the researcher is interested in the outcomes of his research; he probably wouldn't be engaged in the activity unless he had some emotional involvement in what he was doing. Recognizing that investigators do have biases, many of the general principles of empirical investigation have been developed to help the investigator guard against his own wishes and expectations.

These "experimenter biases" inevitably affect a researcher's activities insofar as they influence the questions he investigates and the ways in which he formulates his research problems. Explicit theoretical biases can usually be identified readily in the report of any research and can be taken into account in interpreting the results. A more subtle problem, however, involves the investigator's implicit biases. He may not be aware of these biases, but they nevertheless influence his behavior. Perhaps the greatest opportunity for one's personal, implicit biases to operate without awareness is in designing and carrying out the procedures of a study. Certain procedures tend to elicit certain kinds of behaviors, and incidental features of the procedure, such as the emotional "tone" with which subjects are greeted, influence a subject's response to the total situation in which the research occurs. Subjects greeted warmly with a pleasant smile are likely to behave somewhat differently from those greeted neutrally or perhaps even with some subtle hostility. It is therefore most important for the investigator to examine his own wishes and expectations, to consider whether or not these have influenced the particular methods he has chosen, and to evaluate their possible effect on the ways in which the research procedures are implemented.

FOR FURTHER REFERENCE

Rosenthal, R. Experimenter outcome-orientation and the results of the psychological experiment. PSYCHOLOGICAL BULLETIN, 1964, 61, 405-412.
Scott and Wertheimer, 65-99.
Selltiz et al., 98-108; 583-587.

20. OPPORTUNITIES FOR DISCOVERY

Is the procedure planned so that there is an opportunity for discovery? Should information other than that specified in the proposal be obtained?

Before embarking on a major project in which a researcher will invest a great deal of time and energy, it is wise to scan the problem area with the aim of identifying information that might be obtained reasonably and economically in the course of the research, and which might eventually provide a useful basis for interpreting one's results, for relating one's findings to other studies, or perhaps for suggesting further approaches to the problem under investigation that may be potentially useful.

In conducting certain kinds of experiments, beginning researcher will invest a great deal of time and energy, it is wise to scan the problem area with the aim of identifying information that might be obtained reasonably and economically in the course of the research, and which might eventually provide a useful basis for interpreting one's results, for relating one's findings to other studies, or perhaps for suggesting further approaches to the problem under investigation that may be potentially useful.

In conducting certain kinds of experiments, beginning researchers sometimes feel that talking to subjects is absolutely forbidden by the rules of scientific methodology. Indeed, this may be true during the experimental procedure itself, since, as indicated in a preceding section, anything that happens between the experimenter and the subject may influence the results of a study. But in some investigations, a brief postexperimental interview of the subjects might provide a useful source of information, not to test specific hypotheses, but rather, to provide leads for further research. Scientific investigators, like everyone else, are limited by their own sets and expectations, their own perceptual and cognitive habits. Discovery often means breaking these sets, these habitual ways of perceiving and thinking, and perhaps no technique for breaking sets about one's own work is more effective than talking to the subjects who have participated in one's research.

Of course one cannot plan discoveries, but the research method can be planned so that there is at least the opportunity for discovery. The researcher above all is an observer, and while much of research methodology is designed to focus observations under carefully controlled conditions, a well-planned study also permits the investigator to observe phenomena that might lead to new questions, novel hunches, and further hypotheses about the problems that are under investigation.

FOR FURTHER REFERENCE

Beveridge, pp. 27-40

21. APPROPRIATENESS OF EXPERIMENTAL DESIGN

Has the researcher chosen the most efficient and effective experimental design -- the design that will provide, within the practical limits of his investigation, the fullest answer to the questions posed or the most adequate test of the hypotheses presented?

To a certain extent, the kind of information obtained in any research is determined by the overall strategy of investigation. Natural observation leads to broad descriptions of various phenomena, the identification of potentially important parameters and processes, the formulation of possibly significant questions. Correlational methods lead to more precise descriptions of a more limited range of phenomena in terms of the pattern of interrelationships found among the variables considered. The strategy of experimental manipulation leads to the most precise, typically the most controlled and narrowly focused investigation of particular relations among a few variables.

But within each of these broad strategic approaches there are a variety of tactics that might be used, and these tactics are reflected in the experimental design of a study. For example, using a correlational strategy, an investigator might choose to compare subjects who fall at the extremes of some dimension, such as psychological adjustment, with the aim of identifying gross differences between sharply contrasting groups. Within the practical limits in which a researcher is working, and in terms of the knowledge available at any given time, this design may be the most feasibly and practical choice. But if one studies only subjects at the extremes of a distribution, certain nonlinear relations between variables cannot be determined. However, as knowledge about the various aspects of human behavior accumulates, the existence of nonlinear relations among variables is becoming more and more apparent.

In the strategy of experimental manipulation, a wide variety of design tactics might be used. A simple design in which the independent variable is manipulated and the effects measured in terms of a single dependent variable may be the tactic of choice at any point in a line of inquiry. This design certainly has the virtue of straight-forward simplicity and may be exactly what is called for in resolving some clearly focused problem.

But at the present time in most areas of psychological and educational investigation, theory and research have not yet reached a level of sophistication which permits the formulation of significant questions that can be answered by the simple independent-dependent variable design. The vast majority of problems in psychological and educational research are much too complex to be dealt with meaningfully in terms of a simple relationship between two variables. In most areas we simply do not know enough to pinpoint a crucial relationship that warrants investigation without considering the effects of other variables. Almost all behavior is multidetermined, and any experimental manipulation is likely to have a variety of effects as a function of more than one variable. Thus, a large number of various experimental designs have been developed to deal with multivariate problems and should be used in most investigations. These take into account problems such as the order of experimental treatments, initial baseline of performance, the effects of repeated measurements, the use of correlated measures, and the interaction effects of several variables. Certainly one of these more complex designs should be used merely for the sake of pseudosophisticated complexity; this is a luxury few researchers can afford. Reasonable simplicity of design is a highly desirable characteristic of all research, but in most instances an experimental design providing for a multivariate analysis of the data is likely to be most useful and appropriate.

FOR FURTHER REFERENCE

Lindquist, E.F. DESIGN AND ANALYSIS OF EXPERIMENTS IN PSYCHOLOGY AND EDUCATION. Boston: Houghton Mifflin, 1953, 7-26.
Scott and Wertheimer, 236-272.
Wolfe, 327. (See Criterion 7.)

22. RELIABILITY AND PRECISION OF MEASUREMENT

What is the evidence in support of the reliability of every set of observations or measures used in the research? If reliability has not been established in previous research, how will it be evaluated in the proposed study? Is the researcher aware of any special problems of reliability that might be involved in his proposed research? Is the precision of the measurement procedures consistent with the intent of the research?

Problems of reliability, both in terms of internal consistency and stability over time, have probably received most attention from those working in the psychometric areas of psychology. Every test constructor recognizes that part of his task in developing a measuring instrument is to establish its reliability, and a variety of techniques have been developed to deal with this general problem. But more recently we have come to appreciate the significance of this problem for all research, not only that area of research which deals with test construction.

Consider, for example, a typical study in the area of child development concerned with the relation between certain child rearing techniques and aggressiveness of children. Assume that a child's aggressiveness will be evaluated by judges who observe the child and rate his behavior on a series of scales, each of which is designed to reflect aggressiveness. In this case, the investigator is confronted by three somewhat different issues of reliability. First, the reliability of judges must be evaluated in terms of agreement among judges who observe the same behavior. Then, the internal consistency of the several scales designed to measure aggressiveness must be determined. Finally, the stability of the child's aggressiveness over time and different situations must be investigated. Thus, considering only a single variable in this study, one can readily appreciate the importance of reliability of measurement from several different points of view.

Each kind of research presents its own special problems in evaluating reliability, and every researcher must be familiar with the problems involved in his particular line of inquiry. If these problems are neglected, it is likely that the line of inquiry will be confused by inconsistent results. For example, unreliable measures have probably contributed a good deal to the difficulties encountered in research investigating changes in self concept. If a measure such as the discrepancy between a subject's self concept and his ideal-self concept were used to evaluate change over time, the estimate of change in this discrepancy from one time to another would involve a difference of different measures. This raises a special problem in reliability, for the reliability of a difference score tends to be lower than the reliability of each measure involved in obtaining the difference. In this case, the step-down in reliability is likely to be of considerable importance because the final estimate of change in self concept depends upon a second-order difference score. To be at all meaningful, one would have to begin this chain of difference scores with highly reliable measures; otherwise, by the second order of differences required by the research, the reliability would probably be too low to warrant serious consideration as a research measure.

This illustrates only one of many possible problems in reliability that an investigator might face. Although reliability of measurement is an important issue in every research, it becomes a crucial problem in the event null results are obtained, because one factor that may account for null results is the use of unreliable measures. Thus, a researcher would be forced to conclude that his research did not test the hypothesis he started with or investigate the question that initiated the research. The study, then, could hardly be considered a defensible investigation, and it would seem prudent to consider issues of reliability at the outset, rather than after the data have been collected.

One aspect of the general problem of reliability concerns the precision of measurement. As the researcher considers the reliability of the measures he plans to use, he must also evaluate the precision of his measures in light of the aims of his research. On the one hand, small, subtle differences cannot be measured with gross techniques of observation; on the other hand, needless time, money, and energy might be expended on developing an extremely refined measure to tap large and obvious differences. In most areas of psychological and educational research, our problem is hardly too much precision, but rather, too few instruments that provide anything but fairly rough approximations of the variables in which we are interested. In fact, research in some areas may be blocked because adequate measurement procedures have not yet been developed, and, in all areas of inquiry, significant advances often depend upon adequate refinement of the measures used.

FOR FURTHER REFERENCE

Selltz et al., 166-186.

Thorndike, R.L. and Elizabeth Hagen. MEASUREMENT AND EVALUATION IN PSYCHOLOGY AND EDUCATION. New York: Wiley, 1955, 123-141.

23. VALIDITY AND CHOICE OF MEASURES

What is the evidence of validity of every measure used? If the measure has been used in previous work, what is the evidence of validity in the literature? If the measure is developed for this specific research, what evidence of validity will be obtained? Are there other measures that might better be used?

Problems of validity, of course, have been a central concern of a good deal of theory and research, and a number of extremely useful guides for an examination of this general problem have been published. If the research proposal is faulty in respect to this issue, perhaps the most useful step might be to review one of these references. However, there is a broader problem involved in the style of research in the behavioral and social sciences that warrants some attention in evaluating a proposal for new research. This style might be characterized as an anarchy of measurement.

Every researcher feels free to select or devise his own measures, and this freedom clearly is an important requisite of the overall research enterprise. Significant advances in any field would undoubtedly soon disappear if some group could, and in fact did, legislate the specific measures to be used in every research. At the heart of the research enterprise is the responsible freedom of the researcher.

But the emphasis on this concept must be equally on responsibility and freedom. In respect to problems of measurement, this means a certain responsibility to others engaged in the same general line of inquiry. The researcher is responsible for relating his particular study to other work in the field, not only conceptually, but also methodologically. Specifically, this means that if every researcher uses a different measure to define the same theoretical or conceptual variable, the likelihood that the findings of various researchers can be viewed cumulatively is sharply decreased.

In psychology at the present time, this anarchy of measurement seems to be characteristic of several areas of investigation. Consider, for example, the research literature dealing with impulse control, a variable of some theoretical importance from several points of view. A recent review of this literature indicates that at least a dozen different measures have been used by researchers, each presumably measuring the same variable. But a study following this review of the literature revealed that in one sample, at least, the intercorrelations among a number of these measures were essentially zero (Robin, 1966). No wonder, then, that research results in this area tend to be inconsistent and even contradictory.

This is not a plea for some central legislation of measurement techniques, but in planning a new research there is no need to develop a new measure simply as a virtuoso display of the researcher's creativity. Of course some researches may require the development of new measures, and this usually represents a major effort in itself. But in many studies, previously developed measures can and should be used. This acts to relieve the investigator of considerable preliminary work and also acts to increase the likelihood of continuity from one study to another.

FOR FURTHER REFERENCE

Robin, Dorothea. DELAY OF GRATIFICATION IN CHILDREN. Unpublished doctoral dissertation, Columbia University, 1966.
Selltiz et al., 149-166.
Thomdike and Hagen, 108-123.
Wolfe, p. 326 (See Criterion 6)

24. APPROPRIATENESS OF STATISTICAL DESCRIPTION AND ANALYSIS

Is an appropriate statistical description and analysis of the results made explicit? When appropriate, are alternative ways of analyzing the data suggested? Are the assumptions involved in the statistical analysis recognized, and are the data likely to meet these assumptions? Is the investigator aware of possible problems in the statistical analysis? At each step in the proposal, as in determining the size of the sample, for instance, or in constructing the research design, have the appropriate statistical considerations been made?

Statistics are used to describe data and to establish a quantitative basis for making inferences or generalizations from the results of a study. To a certain extent, the descriptive statistics a researcher uses -- as mean, standard deviation, or range -- reflect conventions designed to aid in thinking about data. For example, the individual scores of 30 subjects on a learning task can be described by a measure of central tendency, such as the mean, and a measure of variability, such as the standard deviation. Thus, instead of the 30 individual scores, the investigator can more conveniently and easily view his results in terms of only two members that describe the distribution of scores he has obtained.

These kinds of descriptive quantitative techniques are useful intellectual devices that can help us think about extremely complex phenomena. They are, in a sense, like shorthand summaries of a great deal of information, but of course they also involve a certain loss of information. Using the mean and standard deviation, for instance, two aspects of a distribution of scores are described, but the score of any single individual cannot be determined. Thus, any descriptive technique can obscure, as well as clarify, the results of an investigation. It is therefore important for the investigator to choose appropriate descriptive statistics, basing his choice on the purpose of the research and the nature of the data obtained.

Having described the data, the investigator is then concerned with generalizing from his results. Rarely is he interested only in the particular sample studies; his aim is to determine whether or not it is reasonable to generalize his findings to the population he has sampled. For this purpose a wide variety of inferential statistics have been devised, each designed to answer specific questions with certain kinds of data. In choosing an inferential statistic, the investigator must keep a number of considerations in mind. For example, does a particular statistical test provide a clearcut basis for answering the research question posed? Do the data meet the assumptions involved in a specific statistical analysis? What is the power of each of several possible statistical tests?

At the beginning of a research, an investigator may not be able to predict with confidence that certain assumptions underlying a statistical test will be satisfied by the data, and sometimes a number of different statistical analyses are possible. The choice may well depend upon an initial descriptive treatment of the data. Nevertheless, recognizing that final decisions about the choice of a specific statistic sometimes cannot be made until after the data are obtained and described, it is most important that the logic of the statistical analysis be incorporated within the logic of the overall plan of research.

FOR FURTHER REFERENCE

Scott and Wertheimer, 319-373.
Selltiz et al., 409-432.

25. INTERPRETATION OF RESULTS

Can various kinds of possible results be interpreted meaningfully? Can positive findings be integrated with previous research and theory? Can negative or null results be interpreted in a way which contributes to knowledge in the field? Would negative or null results make a difference in the area of investigation, in theory or practice?

Every well-designed and well-executed research leads to meaningful results. In some instances, these results might contradict the investigator's initial expectations or wishes, and these studies may sometimes be the most important kinds of research. A researcher may begin with the utmost faith in the superiority of a particular technique in achieving a desired result; indeed, he may design his investigation in the spirit of a demonstration of the superiority of his chosen technique. But regardless of whether the study supports or contradicts the investigator's own faith, hunches, or beliefs, the important criterion for evaluating the results of a study is the degree to which it contributes knowledge to a given line of inquiry.

A special problem for some researchers is finding null results, no consistent differences, and no statistically significant correlations, F rations, or t values. Perhaps this is because success in research has come to be identified with statistical significance. At any rate, regardless of the basis for this prejudice, the scientific quality of a research does not necessarily depend on whether or not statistically significant differences are found.

Many researchers begin their work with a conviction that their hypothesis will be supported, and they are usually much better prepared to interpret positive results than they are null results. At the outset, therefore, in planning a research proposal, the researcher is well advised to consider the variety of possible results he might obtain, and to include in his planning the avenues of interpretation he might take in the event his initial faith is not supported. In general, the plausibility of a hypothesis, the *a priori* probability of predicted outcome, must be sufficiently high so that negative or null results are of scientific interest, and the research must be designed so that such results are interpretable.

FOR FURTHER REFERENCE

Scott and Wertheimer, 375-382.

Selection of Data Relevant to Goal

Purpose:

1. To provide practice in selection of systems of data collection that are relevant to different types of goals.
2. To explore communication in the group.

Materials:

Lists of goals and data collection systems.

Participants:

Total Group.

Time:

45 minutes?

Agenda:

1. Have participants form two groups and hand out lists of goals and data collection systems.
2. The task of each group is to come to a unanimous decision as to whether each piece of data is relevant or irrelevant to the goal.
3. After about 20 minutes, have the two groups compare their decisions. If there is any conflict, the groups should discuss and resolve this conflict.
4. Next, ask participants to focus on the communication that occurred in their small groups.

   Who assumed the leadership?
   Did the group decide on any particular plan of attack?
   Was any one person most influential?
   What happened when all but one person agreed on something?

HANDOUT FOR

Selection of Data Relevant to Goal

TEACHER GOAL:

Conduct a student brainstorming session in which:

1. each child contributes at least one idea.
2. at least fifteen ideas will be given.
3. the teacher will not reject any idea.

DATA	Group A		Group B		Total Group	
	R	I	R	I	R	I
1. Tally on amount of student and teacher talk						
2. Checklist with each student's name and number of ideas contributed						
3. List of all comments made by the teacher during the session						
4. List explaining all ideas given						
5. List of student comments on ideas given						
6. Tally of teacher acceptance and rejection of ideas						

R - relevant
I - irrelevant

Selection of Appropriate Methods of Data Collection

Purpose:

To give participants practice in selecting systems of data collection appropriate to various goals.

Materials:

Paper and pencils.

Participants:

Total Group.

Time:

45 minutes.

Agenda:

1. Each person writes a goal for himself.
2. Participants all state how they, as observers, would collect data for the person who is practicing the goal.
3. The person who wrote the goal would respond as to which method or methods would help him most in deciding whether he had reached his goal.

Given a Number of Systems of Data Collection, Participants Name Goals for Which These Systems Might Be Used.

Purpose:

1. To illustrate the need for use of different systems of data collection to measure attainment of different goals.

2. To explore the variety of systems and their appropriateness for various goals.

Materials:

List of data collection systems, newsprint, and marking pens.

Participants:

Total Group.

Time:

Approximately 1 hour.

Agenda:

1. Give participants the list of data collection systems.

2. Take each system separately and have participants brainstorm all of the goals that might appropriately be measured by each system. (If there are enough participants, they might do this in two groups and compare and discuss their results.)

3. Have the group narrow the list and come to some agreement as to which goals are most relevant to the data collection systems mentioned. (An alternative would be to have the group rank the goals from most to least relevant.)

HANDOUT FOR

Data Collection Systems

1. Checklist indicating how many times each student talked during class.
2. List of comments teacher made each time a student answered a question.
3. Student questionnaires on reactions to a class discussion.
4. 5 minute video tape of one child.
5. Matrix classifying comments made by a principal during a staff meeting.
6. Checklist classifying types of questions asked by students.

Decide on Methods of Data Collection for Specific Goals

Purpose:

1. Help participants explore the relevance of various methods of data collection to various goals.
2. To introduce the idea of participants devising their own methods of data collection.

Materials:

Newsprint, marking pen, and List of Goals (see attached sample).

Participants:

Total Group.

Time:

45 minutes to 1 hour.

Agenda:

1. Give participants lists of goals.
2. For each goal, brainstorm on methods of data collection that could be used.
3. Narrow each list of ideas down to those that the group considers most appropriate.
4. If group decides on a self-constructed instrument as a method of data collection for one of the goals, the group could actually follow through and devise the instrument as a part of the group activity.

HANDOUT FOR

Decide on Methods of Data Collection for Specific Goals

GOALS:

1. At least half of the students participate in the discussion.
2. Students do at least 50% of the talking.
3. Give equal amounts of acceptance and rejection to boys and girls.
4. Do not reject any student comments verbally or non-verbally.
5. Get 75% of the students to smile during the class session.
6. Students reject no more than 25% of each others comments.

Devising Systems of Data Collection for Difficult Goals

Purpose:

1. Use group resources to arrive at methods of collecting data on "hard to measure" goals.
2. To help participants realize that there are many instances when it is necessary to devise one's own system for data collection.

Materials:

Paper, pencils, newsprint, and marking pens.

Participants:

Total Group.

Time:

1 to 1 1/2 hours.

Agenda:

1. Have each person take a few minutes to write down a goal he would like to have for himself (professionally or otherwise) but would find difficult to gather data on.
2. Record each goal statement on large sheet of newsprint for total group to see.
3. Ask participants to suggest or devise systems of data collection that would be appropriate for the goals.
4. When everyone is finished, compare and discuss systems devised for each goal. Possibly the group could rank the systems in two ways -- most to least objective -- and most to least relevant to the goal.

Custom Design of a System of Data Collection

Purpose:

To give practice in the re-designing of a system so as to provide feedback in terms of the original goal.

Materials:

Newsprint, felt pens, and handout.

Participants:

All

Time:

1 hour.

Agenda:

1. Distribute handout.
2. Discuss and list reasons data collection system is inappropriate.
3. Brainstorm alterations necessary for the system to provide adequate feedback.

HANDOUT FOR

Custom Design of a Data System

A teacher has stated the following as her goal:

In a 45 minute class discussion, 75% of the classroom talk will be student's. Of the student talk, at least 50% should be of evaluative thinking.

The teacher has selected the C.V.C. Interaction System to provide feedback.

	Cognitive Memory	Productive Critical Thinking	Expressed Emotion	Classroom Management
Seeks				
Informs				
Accepts				
Rejects				

QUESTIONS TO BE CONSIDERED

1. Does this system provide adequate feedback in terms of the stated goal?
2. Support your answer to number 1.
3. If not, how could you modify the system so that it could be used to give adequate feedback in terms of the stated goal? (be specific)

Selection of Data System in Terms of Appropriateness for Selected Population

Purpose:

1. To present to the participants the criterion of appropriateness in selection of data collection systems.
2. To give practice in selecting appropriate data systems for a specific population.

Materials:

1. 4 - Student-teacher rating scales.
2. Byon's - Student Opinion Questionnaire.
3. The Purdue Rating Scales for Instruction.
4. DeVault's - Teacher Communication Scale.
5. Teacher's Style of Teacher Inventory.
6. Felt pens, newsprint, pads marked in the following manner:

	Reason for Use	Reasons for Non-use
Elementary		
Junior High		
High School		
College		

__Participants__:

All. 2 work groups.

__Time__:

1 hour.

__Agenda__:

1. Distribute copies of the four-student rating scales. Each group will receive copies of only one test. Ask the participants to consider what age levels their test would be appropriate and the supporting reasons.

2. Divide into 4 work groups to further discuss their assigned tests.

3. Do a factor analysis of test for elementary, junior high, high school, and college.

If time permits

4. Brainstorm other populations, such as parents, etc., the scale could be used with some revision of words.

Factor Analysis of Recorders vs. Observers

Purpose:

To give the participants practice in analyzing whether to use an audio recorder, video recorder, or an observer to collect data about classroom behavior.

Materials:

Dittos, felt pens, and 2 newsprint pads marked as follows:

	Advantages of Use	Liabilities of Use
Tape Recorder		
Video Recorder		
Observer		

Participants:

All. 2 work groups.

Time:

1 hour.

Agenda:

1. Divide into 2 work groups.
2. Have the groups list the advantages and liabilities in the use of tape recorder, video recorder, and observer to collect data.
3. Then repeat the process in terms of a specific goal obtained from the group.

Brainstorming of Various Types of Data Collected in a Specific Interaction Analysis System

Purpose:

1. To examine the various types of data that can be obtained from an interaction Analysis System.
2. To examine the meaning of this data.

Materials:

Copies of CERLI Matrix, Flander's, newsprint, felt pens, dittos, and SAVI (see attached).

Participants:

All

Time:

3 work sessions -- 1 hour each.

Agenda:

PART I

1. Divide into 3 work groups with each group examining one of the three systems.
2. Each group brainstorms the various types of data that can be collected with the use of this particular system.
3. Discuss the implications and significance of this data.
4. Place on ditto.

PART II

1. Distribute dittos.
2. Make a comparison chart of the three systems:

FOCUS	CERLI	FLANDERS	SAVI
Affective etc.	x	x	x

3. Place on ditto and distribute.

PART III

1. Divide into small work groups.

2. List a specific goal.

3. Do a force-field analysis on the use of each system to decide which to use -- Limit each system to 15 minutes.

The Assessment

NOTE: the following material has been excerpted from A GUIDE TO ASSESSMENT AND EVALUATION PROCEDURES, The New England Educational Assessment Project (funded under Title V of the Elementary and Secondary Act of 1965), October, 1966.

STEP I

THE ASSESSMENT PLANNING CHART

(Step I must be completed before the pupils begin their participation.)

In this section:

Page
Listing the objectives of the project 4
Expanding the objectives 4
Translating the objectives into descriptions of behavior 5
Listing the possible methods of evaluation 5
A table of representative learning outcomes and possible methods of evaluation 6

DIRECTIONS

OBJECTIVE

On a separate piece of paper, list all the objectives of the project. Then using a separate planning chart for each objective, write the objective in the box in column A. In parentheses under each objective write the code number as listed in *Instructions for Title I 1967 Application tion Forms OE-37003*, page 13. Extra planning charts are included in this guide.

METHODS OF EVALUATION

Expand each objective listed to include any outcome you expect or hope for, regardless of how difficult its measurement may seem. Remember, that for each objective listed, some kind of evaluation should be presented at the end of the project. The expanded objectives should be listed in the boxes in column B.

DESCRIPTION OF PUPIL BEHAVIORS

Translate each expanded objective listed in column B into brief descriptions of actual pupil behaviors. List each behavior separately and describe specifically what the pupil should do at the conclusion of the project. List the descriptions of pupil behaviors in column C.

EXPANSION OF OBJECTIVE

Consult the table of representative learning outcomes and possible methods of evaluation that follows this sample planning chart. (See page 6.) From the table, choose the methods of evaluation which apply to the specific behaviors listed in column C. List the pertinent evaluation methods in column D.

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*NOTE: In the SAMPLE ASSESSMENT PLANNING CHART, column C, some boxes have been left undesignated. This has been done to indicate that although each expanded objective has many descriptions of pupil behaviors, some limitations should be arrived at in order to place proper emphases on the more important objectives and in order to assure that the evaluation process will be constructed in a practical length.

SAMPLE ASSESSMENT

OBJECTIVE (COLUMN A)	EXPANSION OF OBJECTIVE (COLUMN B)
To improve classroom performance in reading beyond usual expectations (12)* *12 is the code number taken from OE-37003, page 13.	To improve silent and oral reading speed, reading comprehension, difficulty level, and vocabulary.
	To increase interest in reading.
	To improve attitudes toward books and libraries.

PLANNING CHART (THIS MUST BE DONE BEFORE THE PUPILS ARRIVE)

DESCRIPTION OF PUPIL BEHAVIORS (COLUMN C)	METHODS OF EVALUATION (COLUMN D)
Pupil reads at measurable greater rate than in pretest. (speed)	Objective test, standardized or locally made.
Pupil understands longer sentences with increased accuracy. (comprehension)	Objective test, standardized or locally made.
Pupil understands more difficult sentences, paragraphs, and passages. (difficulty)	Objective test.
Pupil reads orally with increased accuracy of pronunciation, word emphasis, inflection, sounding unknown words. (oral reading)	Checklist, objective test.
Pupil indicates increased preference for reading on self report checklist or rating scale. (interest)	Questionnaire, checklist, interest inventory.
Pupil is observed by teacher to show or express increased interest in reading on teacher rated checklist or anecdotal report. (interest)	Questionnaire, checklist, interest inventory.
*SEE NOTE IN DIRECTIONS COLUMN	
Pupil expresses or shows moderate or strong feelings about books or libraries. (attitude)	Rating scale, questionnaire, checklist, attitude loaded objective test.

TABLE OF REPRESENTATIVE LEARNING OUTCOMES AND POSSIBLE METHODS OF EVALUATION

(Numbers in parentheses refer to code designation taken from *Instructions for Title I 1967 Application Forms OE-37003,* page 13.)

	TYPES OF BEHAVIORS (LEARNING OUTCOMES)		POSSIBLE METHODS OF EVALUATION
A	Application (11-14) Concept Acquisition (11-14) Memorization of Facts (11-14) Problem Solving (11-14) Reading Comprehension (11-14) Skills (number, etc.) (11-14)	A	Objective Test, Product Evaluation, Rating Scale, Checklist
B	Performance (11)	B	Rating Scale, Checklist, Product Evaluation
C	Classroom Behavior (41-45)	C	Rating Scale, Checklist, Attendance Record, etc.
D	Interest (14)	D	Questionnaire, Checklist, Interest Inventory, Factual Vocabulary Test (with words from various interest fields)
E	Attitude (31, 32)	E	Rating Scale, Questionnaire, Checklist, or Objective Test (with factual material that has attitude-loaded responses.)
F	Aspiration Level (33, 34)	F	Rating Scale, Interview, Simple Objective Test, Word Association Test, Open Ended Sentences (psychologist needed.)
G	Adjustment (53)	G	Rating Scale, Anecdotal Report, Interview, Sociogram

After you have chosen the proper methods of evaluating the expected learning outcomes of your project, write your choices in column D on the assessment planning chart.

STEP II

SELECTION AND DEVELOPMENT OF INSTRUMENTS

(Step II must be completed before the pupils begin their participation.)

In this section:

Page
Basic information about standardized tests 8
Basic information about locally made tests 9
Basic information about rating scales 9
Basic information about checklists 12
Basic information about questionnaires 13
Basic information about anecdotal reports 14
Basic information about product analysis 15

STANDARDIZED TESTS

A Standardized Test is a test that has been given to a specified group of pupils (the norm group) and the results presented in organized fashion (tables of norms) so that a pupil who takes the test may be compared with this group. Types of interpretive scores given on norms tables are grade equivalents, intelligence quotients, mental ages, percentile ranks, and stanines. Sometimes raw scores, usually number of items correct, are converted to intermediate scores, such as standard scores, or converted weighted scores (to allow for equating raw scores from different forms of the test) before translation to these interpretative scores. Standardized tests are the most objective devices presently available for measuring factual recognition, certain skills, concepts, understandings, and problem solving, and sometimes interests, attitudes, and personality. They should be used only if found satisfactory for the project and for specific pupils involved on each of the following matters:

1. The test should be available in at least two equivalent forms (for pretest and post-test). If you wish to use the same test for selecting pupils for the project, it is best practice to use a different (third) form of the test for the selection.
2. Face validity analysis: Go over each item (question) of the test to be sure that:
   a. What the pupil actually does in getting the correct answer is the behavior that you want to test.
   b. The distractors (incorrect answers) are plausible to the pupils of your project, (or are they out of their range of familiarity?)
   c. All words and symbols or pictures are familiar to the culturally deprived (is there cultural bias?)—*unless* this is the sort of change you hope to measure.
3. Norm group analysis: Compare background and other descriptive information given by the publisher for the norm group with similar information for your project pupils. Probably this information is sparse, and you need be particular about this only if your experimental design is type 3 (Comparing gains with local, state, or national norms. See page17)
4. Appropriate score scale must be available for comparing pre-test with post-test. To see if such a score scale is presented with a test, or to select the most applicable for your project, the following suggestions are given:
   a. If there are no conversion (standard or converted) scores to which the raw scores are transposed from each form of the test, or if the publisher states that raw scores from all forms may be used interchangeably, then use raw scores.
   b. If raw scores are equated or transposed to standard, converted or grade equivalent scores by separate tables for each form of the test, then use the standard, converted, or grade equivalent scores. In addition, notice how much of a change in the standard, converted, or grade equivalent score is caused by first a one-point change, and then by a change of one standard error of measurement (as given in the manual) in raw score. This will make you more cautious in the interpretation of both individual differences in a class, and grade-to-grade differences for individuals and classes.
   c. If percentile rank scores are used, you may state only the pre-test and post-test percentile ranks for each pupil; or (as stated earlier) for a class, the highest, median and lowest percentile ranks; or, for each quarter or fifth of the class as ranked on the pre-test, the highest, median, and lowest percentile rank on the post-test. (Statistically, percentile ranks are not equal-interval scales so that the usual mean and standard deviation types of statistics are not applicable, and gains in percentile rank are not comparable.)
   d. Check with your State Department of Education concerning the type of score scale and the form to use in reporting data from standardized tests. It is required to tabulate each pupil's score on a given test statewide in reporting to the U.S. Office of Education. Therefore, the same score scale should be used throughout the state.

LOCALLY-MADE TESTS

Locally-made objective or essay type tests are necessary when standardized tests are inadequate for reasons of content, difficulty, scope, or cultural bias. Common procedures involve listing objectives and expressing them in terms of pupil behavior changes (as seen in the Assessment Planning Chart, pages 4 and 5, making a two-way blueprint of learning outcome vs. content coverage, writing items, trial administration, and assignment of scoring weights to items and parts.

The most versatile form with respect to objectivity, type of learning outcome, and discrimination possible is the multiple-choice. Points to watch:

1. An item (question) should test one idea only.
2. Language should be simple, unless complexity of language is an objective.
3. Format should be clear. Responses should be at the end of the sentence, and should be brief. Grammar should be correct for all responses.
4. Possible responses should be homogeneous and should be equally plausible to the pupil.
5. There should be three, four, or five possible responses (choices) according to the grade level.
6. The correct answer should be evenly spread among the choices (a, b, c, d, e) for the entire test.

In essay type tests, most care is needed in the phrasing of the questions and in the objectivity (consistency) of the scoring. Points to watch:

1. Wording should be simple, so that there is greater likelihood that the pupil will answer *what* is desired as well as in the desired scope and context (answer will not be too brief or too vague).
2. Scoring should consist of adding weighted parts for each question: possible points are assigned beforehand for each fact, concept, procedural step, or part-answer, with the numbers of possible points weighted according to importance. Total points for each question and for the entire test can then be treated as numerical scores to be organized and interpreted.

Since test construction is a specialized undertaking, seek assistance from the best authority available.

RATING SCALES

Rating scales may be devised to attempt to measure performance, attitude, interest, character, or personality. A rating scale allows classification along a continuum of either frequency of occurrence (always, usually, occasionally, never) or intensity (strongly agree, mildly agree, undecided, mildly disagree, strongly disagree) of reactions or behaviors. There is also a "person-to-person" (ranking) rating scale method. *In rating scales, the person doing the rating is the measuring instrument: the scale merely systematizes this human measuring.* Some brief pointers on the construction and use of rating scales are:

1. A rating scale should preferably have 5 to 9 equidistant rating points, identified by numbers usually arranged with the highest end or most desirable point the highest number. Ordinarily several scales are used in a cluster, and if clusters are to be summed or averaged this numbering must be consistent for proper weighting of the sum or average. If one scale is deemed less important than others in a cluster, its highest point can be set lower than the others; or, for consistency by the rater, all scales can be the same pointwise, but each would be multiplied by a different weight before the adding or averaging.

2. A scale must rate the same characteristic at all points.
3. Points on a scale should correspond to actual observable differences between pupils to be rated.
4. A scale may be either *descriptive*, with purely descriptive words at the points: (Value judgments are not included.)

Example:

Class participation

1	2	3	4	5
Almost never participates	Participates only with urging	Participates occasionally to about half the time	Participates most of the time	Always participates

or a scale may be *evaluative*, with value judgments implied by the words assigned to each point:

Example:

Class participation

1	2	3	4	5
Unsatisfactory, almost lacking	Poor, needs encouragement	Average	Good, above average	Enthusiastic, completely satisfactory

It is better to separate these two functions (descriptive and evaluative), as in anecdotal reports, so that the user of the results may make his own value judgments from the behaviors described.

5. Two practical arrangements of combining separate descriptive and evaluative scales are:
   a. Beside each descriptive scale insert a simple evaluative scale:

Example:

Class participation

Rate amount of participation below					Rate quality of participation below				
1	2	3	4	5	1	2	3	4	5
Almost never participates	Participates only with urging	Participates occasionally to about half the time	Participates most of the time	Always participates	Unsatisfactory	Barely satisfactory	Average	Above average	Very satisfactory

   b. After a cluster of descriptive scales insert one or two evaluative scales, in summary fashion:

Example:

Classroom behavior

1	2	3	4	5
Hardly ever interested or cooperative	Sometimes interested and cooperative	Average interest and cooperation	Usually interested and cooperative	Always interested and cooperative

Playground behavior

1	2	3	4	5
Either withdrawn or belligerent	Tends toward either withdrawal or anti-social	Average adaptation and participation	Usually dependable cooperative and/or resourceful	Resourceful and/or gets along in or leads wholesome activities

Overall behavior evaluation

1	2	3	4	5
Unsatisfactory, needs attention urgently	Requires improvement	Average	Above average	Very satisfactory

6. With each rating scale include a "familiarity indicator", where the rater can indicate how well qualified he feels he is, considering his own personal bias, degree of acquaintance with the pupil, or opportunity he has had to get an adequate and fair sampling of behavior, to allow satisfactory rating of that particular pupil.

(Beside each scale if possible; for each pupil at least)

Example:

AA	Good opportunity for unbiased observation
AB	Good opportunity but observation may be biased unduly
BA	Fair opportunity for unbiased observation
BB	Fair opportunity but observation may be biased unduly
CA	Some good unbiased observation, but not enough for unconfirmed conclusions
CB	Some good observation, not enough for unconfirmed conclusions, and probably biased
D	Acquaintance or opportunity for observation not sufficient to make rating. Reasons for bias are:__________ ________________________ ________________________

7. Agreement of raters. All (if possible) or a sample of raters should go over each scale together to attempt common interpretation of each point on each scale. This is particularly important if results from several raters are to be averaged in later summaries, or changes in ratings (pretest-posttest) are to be reported. Some raters avoid extremes; others may make hasty decisions or be unduly influenced (biased) by prior information or opinions ("halo effect"). If there is considerable diversity of interpretation of descriptions on a scale, the description may have to be reworded.

CHECKLIST

A checklist is a list of subjects or statements to which only two responses are possible.

1. Possible responses:
   (a) check or don't check
   (b) like or dislike
   (c) agree or disagree
2. Note that intensity of feeling is omitted. If intensity is desirable, expand the checklist into a rating scale.

Examples:

Checklist items:(agree or disagree)

______1. I think coming to school is fun.

______2. I seldom lose interest in this class.

______3. I have learned a lot this year.

______4. This class has made me a better reader.

Rating scale items:

1	2	3	4	5
Strongly Dislike	Mildly Dislike	Doesn't Matter	Mildly Like	Strongly Like

______1. Having to go to school in the summer.

______2. Going to school after regular hours.

______3. Reading a book at home.

______4. The way my teacher teaches me.

3. The descriptive checklist: a special type of checklist. The checking is usually done by the teacher, although it may be a pupil report device. Each description that applies is checked. (Examples below.)

Pupil Characteristics

______Cannot unlock words

______Speech interferes with reading

______Needs glasses

______Has weak phonics background

Program Characteristics

______Needs more visual aids

______Was planned with unclear goals

______Needs specialized personnel

______Lacks effective evaluation

4. Variations in the checklist. Sometimes more than two responses are possible in the nature of frequency-of-occurrence categories.

Example: never seldom often always (responses)

______Look forward to coming to school

______Feel the teacher is trying to help me

______See the use of what I am being taught

QUESTIONNAIRE

The questionnaire is a series of questions, usually of the "yes"–"no" variety, that is filled out by the pupil. Occasionally, numerical answers are requested, such as "How many books did you read last year?" Questionnaires must be carefully worked out, checked, tried out, and revised in order to avoid:

1. Vocabulary that is too difficult or otherwise unfamiliar.
2. Emotional overtones, or emotionally-toned experiences (unless this is what you are trying to measure indirectly). These overtones may distort the factual information you are seeking.

Example:

(Good) Has your teacher been able to help you when you did not understand what you were to do?

(Poor) Would you want to have a teacher who did not divide her attention equally among the whole class?

3. Social stereotypes, or descriptions that the pupil will either choose or avoid because they meet with or conflict with the general approval of society. Avoid topics of sex, religion, and masculinity-femininity on this account. A pupil will rarely report himself as "bad".
4. Other generally "visible" items including those wherein the pupil will likely choose the response he thinks the teacher "wants".

Example:

I try to do my homework on time every day.

5. Negative statements. Word all statements positively, so that the pupil does not have to review the logic of the statement each time to decide whether his agreement should be recorded "yes" or "no".

ANECDOTAL REPORT

Anecdotal report is the systematic writing down of observations of pupil behavior that cannot be measured or classified by more formal tests, rating scales or other devices. Many samples of the behavior of a pupil are required for adequate assessment of social interaction, character, attitudes, interests, motivation, and aspiration level by this method. Record each observation of a pupil and your best interpretations of that observation in separate parallel columns. Avoid over-interpretation. The separate columns are both a check on your interpretation (separating "facts" from projections,) and a help to other interpreters in making their own conclusions.

Example:

Date	**Setting**	**Actual Behavior Observed (what he did)**	**Implications of the Behavior (evaluation)**
10/66	Classroom	Johnny was willing to read before the class for the first time.	Johnny feels more sure of himself
10/66	Lunchroom	Mary cleaned up the entire table at which she had been eating, even though some of the debris was not hers.	Mary is beginning to develop some awareness of cooperation
10/66	Schoolyard (recess)	Fred admitted he had been tagged in this morning's game of tag football, even though the score was close and he was tagged so lightly that he easily could have disputed the play.	Fred is showing evidence of fair play.

PRODUCT ANALYSIS

Product analysis is the inspecting and rating of products which pupils have made in order to measure the behavior that went into making the product. A careful list should be made of the actual behavior presumed to have contributed to the product, so that the assumptions made are justified. Products for analysis may be writing samples (for penmanship), arithmetic samples or essays (parts of classroom tests), drawings, reports, projects or objects produced in industrial arts classes.

Possible general methods to use in product analysis are:

1. Comparison of the product with a standard:

   Examples: Handwriting scale
   Teacher's sample "perfect" essay paper, with weighted parts, as described under *locally made tests* page 9. (Sometimes called "factor counting with weights".)

2. Checklist—this is sometimes called "factor counting":

   Example: Reading a passage orally in class.

   Checklist of evident qualities

   _____reads at an even pace
   _____speaks clearly and loudly
   _____is able to deal with "new" words
   _____pauses in proper places

3. Factor rating. This method might involve a mark (A,B,C,D,F) on each of several factors sought:

   Example: Drawing (blueprint type) of a tool box for industrial arts

   Factor rating (mark each line)

Dimensions	B
Lines	A
Lettering	C
Neatness	C
etc.	

4. Overall rating. This would apply to an art class drawing or an English class composition. The teacher has in mind the characteristics of a product worthy of each mark, and matches them mentally. Applied to an essay-type test question, this is considered inferior (less accurate) than the factor counting with weights described above.

5. Overall ranking. This method might apply to the same types of product as overall rating (4). The papers from the entire class are arranged in order of merit from best to worst, keeping in mind the qualities sought. Since this "keeping in mind" is not organized in orderly fashion, the method is not highly regarded as a measurement procedure. The resulting "score" is a rough rank order number.

C. Data Collection Systems

In addition to the CERLI VERBAL BEHAVIOR CLASSIFICATION SYSTEM (CVC) included in this section, the CERLI staff considers the following items particularly relevant and applicable:

"Summary of Categories for Ned Flanders' Interaction Analysis System", Amidon, Edmund J. and Flanders, Ned A., The Role of the Teacher in the Classroom, Minneapolis, Minnesota: Association for Productive Teaching, Inc., 1967. (revised ed.)

"The Purdue Rating Scale for Instruction", Remmers, H.H. and Elliott, D.D., The Purdue Research Foundation, Purdue University, 1950.

"Categories for Sequential Analysis of Verbal Interaction", Simon, Anita and Agazarian, Yvonne, Research for Better Schools, Inc., 1967.

"Student-Opinion Questionnaire" (form #7, revised), Prepared by the Student Reaction Center, Western Michigan University, Kalamazoo, Michigan. (For students in grades 7-12.)

"Teacher's Behavior Inventory", Ohlson, Merle; Ryback, James and Antenen, Wayne, Gifted Child Study Project, University High School, University of Illinois

"Teacher Communication Scale" (Student's Version), De Vault, M.V., Department of Education, University of Wisconsin, December, 1963.

III. SELF-CONFRONTATION

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B. Training Alternatives

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III. SELF-CONFRONTATION

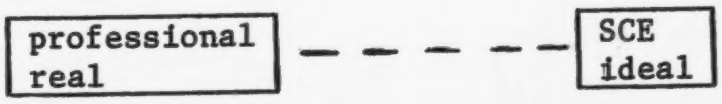
A. Rationale

1. Definition

There is often a difference between what a person wants to do and what he does. Whenever a person develops operational goals and receives reliable data concerning the attainment of those goals, he may perceive a conflict or discrepancy between the "ideal" (goal) and the "real" (data). A self-confrontation, then, is challenge and an encounter which brings one face-to-face with a goal-data relationship.

2. Attitudes, Knowledge, Skills

The SCE encourages continuous self-evaluation. In a more traditional context, the professional displays the "real" behavior and the in-service director represents the "ideal". The SCE in this case could be an administrator, supervisor, department head, master teacher, or curriculum consultant. In any event, he represents what the professional "should" be doing and often has the authority to insist on it. His visits to the classroom are therefore critical in nature and the teacher tends to be defensive. If there is a discrepancy between the ideal and the real, conflict is external or interpersonal in character. Such "expert" guidance has of course contributed much to change, but the improvements are sometimes more apparent than genuine. Much time is spent in endless discussions of realiability, validity, and applicability. Professionals may go to great lengths to comply outwardly but continue to do things in their former way. Associates often learn the rules of the game and help the professional present the right image whenever visitors appear. Furthermore, actual changes may be made only to please the powers-to-be rather than because of personal commitments to new behavior.



The collaborative approach to continuing professional self-development is structured somewhat differently. The professional not only displays the real behavior but is also the source of the ideal when he establishes his own goals. If there is a discrepancy between the ideal and the real, this conflict is internal or intrapersonal. He becomes

professional
ideal vs. real
SCE

his own critic and therefore is threatened only by himself.

The SCE will be able to help a professional resolve conflicts that occur as a result of confrontation.

There are at least four ways by which a professional can resolve conflicts when confronted with a goal-data discrepancy. (a) He may reject the data as unreliable, invalid, irrelevant, or unimportant. (b) He may reject the goal as unattainable, improper, unworthy, or worthless. (c) He may withdraw from further confrontations. (d) He may change his attitudes and/or practices to develop more productive behavior. The first three alternatives contain defensive elements and seem more consistent with the authoritative helping relationship, but the fourth is more consistent with the collaborative relationship in which self-confrontation motivates change.

The SCE should know and understand confrontation and dissonance theory.

People seem to prefer consistency and thus try to act in ways that are consistent with what they know. Frequently, however, inconsistencies arise between how a person acts and what he knows, and this discrepancy creates a state of imbalance or dissonance. In a similar way, dissonance is experienced whenever an individual continues to expend effort in order to reach a goal yet does not reach it (Festinger and Aronson, p. 127). Balance theory views human behavior as tension-reducing responses to stimuli which have produced tension. "The simultaneous existence of cognitions which in one way or another do not fit together leads to efforts on the part of a person to somehow make them fit better" (Festinger and Aronson, p. 125). Opinions and actions can be made more congruent by changing the opinions, the actions, or both.

In short, when a professional confronts internally a goal-data discrepancy, this state of dissonance motivates behavior to restore cognitive balance. The influence of the SCE then is greater when his communications help to reduce rather than to increase dissonance (Festinger, p. 26).

The professional will create a supportive atmosphere by ability to utilize group resources in support of self-confrontation.

Intrapersonal confrontation can be promoted by certain interpersonal elements, not only in interaction with the leader but also with a small group. Those who are strongly dissonant have been found to want social support from those who agree with them in order to reduce the dissonance. Others who share his beliefs or goals can help to confirm them and to reinforce new behaviors. Group interaction helps in the reduction of dissonance in two ways: (a) receiving social support, and (b) influencing others who need support. (See Festinger and Aronson, pp. 133-34)

The SCE must have a constructive attitude in order to achieve positive results for the teacher. This confrontation has the following certain characteristics:

(a) internal rather than external;
(b) intrapersonal rather than interpersonal;
(c) collaborative rather than authoritative;
(d) safe rather than threatening;
(e) constructive rather than critical.

The SCE should develop a collaborative rather than an authoritative attitude, to promote self-confrontation.

The presuppositions of non-directive counseling are that a person has worth, significance, capacity for good, and the ability to help himself. The counselor then concentrates on providing an atmosphere in which this self-development can occur. Many of these conditions pertain to the relationship between SCE and professional in the process of confrontation.

Change seems to be dependent upon the relationship between two people who are in contact with each other: (a) a professional in a state of incongruence and having difficulties with tasks, and (b) an SCE who experiences unconditional positive regard for the professional. He tries to accept the professional as a separate being and he tries to see the world as the professional sees it. The SCE as a "second you" provides a safe opportunity for the professional to see himself more clearly, more honestly, more deeply and to choose more meaningfully. The skills are those of listening, giving understanding, providing an accepting atmosphere, reducing threat, encouraging expression of ideas and improvement.

3. Why Self-Confrontation

The self-confrontation approach is the setting in which the professional will be motivated toward changing behavior. Inherent in the SCE program is the philosophy that change is more likely to occur in a more meaningful way if the individual makes the decision to reduce the discrepancy between his ideal and real behavior. If this decision toward change is internal, then the new behavior will be more significant to the person himself than an imposed need which is suggested by others.

4. Conceptual Presentation

The staff will instruct the participants in use maintenance operation, and advantages or limitations of the equipment; the training agency will present and demonstrate and explain equipment to be used. This will include actual practice which will be supervised by staff members.

After a staff presentation of a lecture defining the process of confrontation, two simulated examples will be demonstrated in a general session. The focal point of the role-play will be the rejection of data and the ambiguity of the goal.

In the daily seminar, the leader and the teacher will set goals and the observer will collect data on the leader and teacher's behavior. Using the data, the leader will confront the teacher, and then the staff member will confront the leader. The behavior of the staff member will be analyzed by group members and other staff members.

The teacher or the leader will resolve conflicts when confronted with a goal-data discrepancy by rejecting the data, rejecting the goal, withdrawing from further confrontation or changing his practices to develop more productive behavior. The collaborative support of the group members will aid the teacher or leader in trying new behavior necessary to reach the stated goal or support him in trying to establish a new goal.

5. Evaluation

Evaluation of the leader's knowledge, understanding, and use of the confrontation approach will be made by means of the following:

Staff critique in seminar
Daily audio tapes of seminar confrontations
Pre and post video tapes to be analyzed by experts
General achievement test

The staff members will observe and participate in the daily seminars. They will provide feedback to the leader as to his ability to:

Encourage continuous self-evaluation
Help a teacher resolve any conflicts or discrepancies that may occur as a result of a confrontation between ideal and real behavior
Create a supportive atmosphere
Know and demonstrate his understanding of confrontation and dissonance theory
Demonstrate constructive and collaborative attitudes

Daily audio tapes will be made which will be analyzed later by consultants. Pre and post video tapes will be made of the leader in demonstrating confrontation approach in a role-playing situation with an unknown teacher. These tapes will be analyzed by experts. A pre and post general achievement test will be given which will include items on confrontation approach.

B. Training Alternatives

1. Conceptualizing Activities

SCE Describes Confrontation Process in Relation to His Role

Purpose:

Describe confrontation process in relationship to SCE role.

Materials:

Newsprint and handout.

Participants:

All

Time:

1 hour (?)

Agenda:

1. Read handout.
2. Brainstorm ways he can facilitate rather than influencing the process.

HANDOUT FOR

SCE Describes Confrontation Process in Relation to His Rol

As a part of the overall explanation of the confrontation process and its use in the seminar, it is suggested the SCE clarify to the participants his role in relation to the entire process. Basically, it is one of persuading the participant to establish goals in operational terms, possibly collecting or assisting in the collection of data and presenting the data in as objective a manner as humanly possible. He in essence is a facilitator rather than an ingredient in the process. This position of course being vital if the resultant conflict of the confrontation is to be confined internally within the participant.

Readiness for Self-Confrontation

Purpose:

To help participants discover a natural readiness for finding out more about self-confrontation.

Materials:

Papers with a goal and data collected about that goal (enough for all).

Participants:

All (at least 1 staff).

Time:

25 minutes.

Agenda:

1. Ask participants what they would do next if they had a goal and had collected data about the achievement of that goal. (Written response) If they respond that they would compare them, they probably are past the readiness stage.

2. If the responses do not point to the confrontation direction, have a group role-play some of their responses and help the group find out what thread or what direction the responses are taking.

3. Ask if it would be reasonable to do something with the data collected and the goal that has been established.

4. Ask participants to write down their goal and on the same piece of paper write down the data they or an observer collected.

Role-Play of Self-Confrontation

Purpose:

Role-play by staff of the confrontation process to allow participants to observe the process and ask questions which are important to them.

Materials:

None

Participants:

4 or 5 staff.

Time:

45 minutes.

Agenda:

1. Role-play of staff in confrontation situation.

2. By the time the confrontation role-play opens, the teacher has an operationalized goal and the observer will have measured the behavior in the classroom. For example, if the goal of the teacher is 50% student-talk, then the observer will count the number of minutes the students talked and decide what percentage of the time was used in pupil-talk.

3. The confrontation period opens with the SCE eliciting from the teacher a restatement of his teaching goal. The SCE requests the measurement of behavior from the observer; then the teacher is asked to relate this measurement to his goal and to examine these results either by adjusting his procedure to better meet the goal or by adjusting the initial goal in some way.

4. Each CERLI staff member playing a role in the demonstration may be interviewed at any time during the exercise or after it. He can be asked how he felt about certain comments or about the actual process of confrontation.

Discussion of Confrontation Rationale

Purpose:

To discuss confrontation theory and rationale for their use in the seminar.

Materials:

Handout

Participants:

All

Time:

To be determined.

Agenda:

1. Distribute handout.
2. Discuss implications

HANDOUT FOR

Discussion of Confrontation Rationale

There seems to be a need for the participants to have a basis of understanding for the confrontation approach and the purpose for its use in the seminar.

Basically, it is the employment of the notion that if there is discrepancy between the self-established ideal behavioral goals of an individual and the objectively stated or portrayed outcomes of the real behavior of that person that there is created a feeling of internal conflict in relation to that discrepancy. The created conflict necessitates resolution in the form of:

1. Altering of the ideal
2. Looking for alternative approaches for the attainment of that ideal

The purpose for utilizing this approach is that change occurs as a result of a disruption of equilibrium. The conflict created by the confrontation of stated ideal with the real provided the disruption. The determination of what to do with the disruption leads to return to equilibrium.

Likewise, it is consistent with the notion that meaningful change or learning demands self-involvement and self-determination and that imposed change may be adhered to but might never be fully desired or accepted.

The Theory of Cognitive Dissonance

Purpose:

To teach the theory of cognitive dissonance to the trainees.

Materials:

Festinger text, Cognitive Dissonance.

Participants:

All

Time:

To be determined.

Agenda:

Allow people to read the text with possible time for discussion of various chapters, etc.

Brainstorming Examples of External and Internal Confrontation

Purpose:

To accumulate a number of examples of internal and external confrontation to be used to illustrate the areas in which they differ.

Materials:

Handout

Participants:

All

Time:

Enough to read and discuss the differences between internal and external confrontation (depends on the number of examples used).

Agenda:

Part I

1. Have participants read the examples.
2. In groups of three, find all the differences that they can.
3. Bring these lists together for consolidation.

Part II

Have participants brainstorm other examples of external vs. internal confrontation.

HANDOUT FOR

Brainstorming Examples of External and Internal Confrontation

A. EXTERNAL:

1. Supervisor: here is a copy of the syllabus for a new math course. We trust you will make the necessary changes in your present course outline. I will be in your class a week from Monday to see how you seem to be doing on the changes in actual classroom teaching.

   Teacher to Supervisor: O.K., I will make the changes and will see you next Monday (to himself -- do I have any choice? What if I'm not comfortable with these changes? He's going to evaluate me next week too!!)

   THE NEXT MONDAY AFTER CLASS

   Supervisor to Teacher: You did very well. I think the changes seem quite good.

   Teacher to Himself: Now I know I've got to make those changes when he comes to inspect! But, he's not here all the time, so I might as well go back to the old way.

2. Teacher to Himself: Well, it's a rule that teachers must stay in the building until 4:00 every afternoon. This way we're more "professional" it says, but today I'm going to leave at 3:15, as soon as the students leave.

   Supervisor: (the next day) Miss_________________ I received a report that you left the building early yesterday. Are you aware of our rules here at Pleasantville?

   Teacher: Yes sir, I am. I'll be sure to stay until 4:00 (to himself), but they can't make me use that time constructively or make me any more professional by jailing me and telling me what to do.

B. INTERNAL:

Teacher to Peer: I'm going to try this simulation game today -- John has never been interested in anything yet and this might just involve him.

Peer: How will you know if he's involved?

Teacher: He'll speak and give reactions without me directing some specific at him and putting him on the spot.

Peer: Let me know how it turned out, if you want to.

Teacher: Well, in the simulation exercise, John talked 3 times and I "had" to ask him one direct question so I guess I succeeded 75% worth toward involving John. Now I still want to find new ways of helping him so that next time I don't have to ask him even one direct question and he responds verbally 4 times.

Internal Confrontation

Purpose:

For participants to examine the reasons for a goal being the individual's rather than imposed.

Materials:

None

Participants:

All

Time:

1 hour.

Agenda:

Ask the participants to react to a directive coming from their superior telling them that they have more pupil-talk in their classroom than they have presently -- ask the following questions:

1. Do you accept the assumption underlying the proposed change?
2. Will they try to change -- if so, why? If not, why not?
3. If change -- how long will they think they'd attempt to achieve these goals?

Theory of Confrontation

Purpose:

To help explain theory and to help visualize relationships inherent in the self-confrontation approach.

Materials:

Festinger's Cognitive Dissonance. Attached quiz.

Participants:

All

Time:

1 hour 35 minutes.

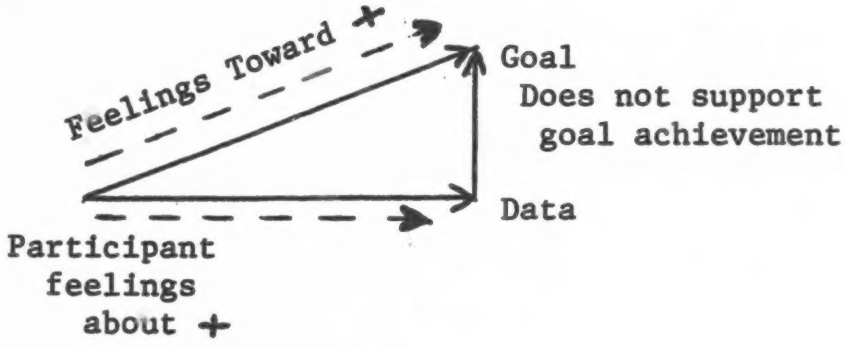
Agenda:

1. Ask them to read the following in Festinger, Cognitive Dissonance, Chapters 1 and 2, pp. 261-271.
2. Ask them to answer the questions on the attached quiz.

HANDOUT FOR

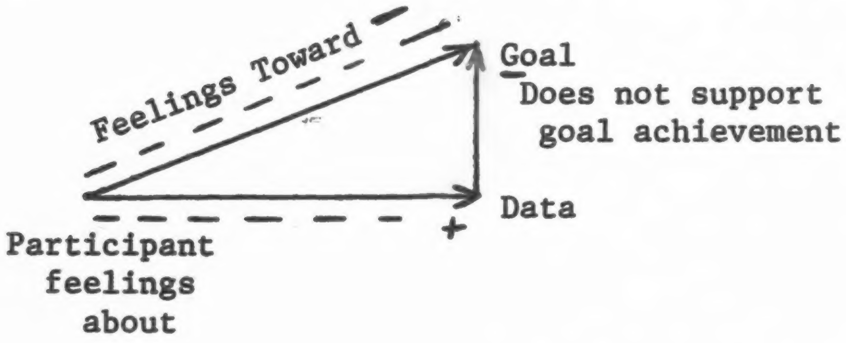
Theory of Confrontation

a.


Feelings Toward +
Goal
Does not support goal achievement
Data
Participant feelings about +

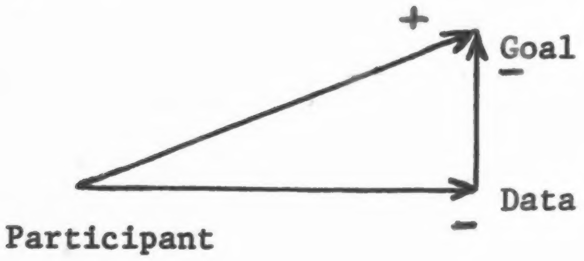
Is this balanced or unbalanced?

b.


Feelings Toward −
Goal
−
Does not support goal achievement
Data
+
Participant feelings about

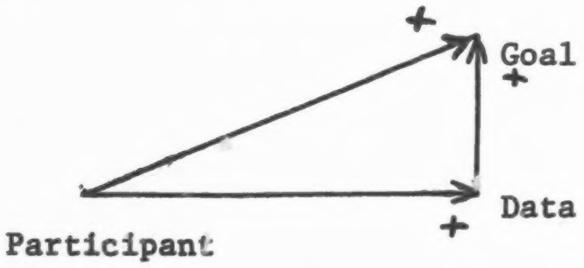
Balanced or unbalanced?

c.


+
Goal
−
Data
−
Participant

Balanced or unbalanced?

d.


+
Goal
+
Data
+
Participant

Balanced or unbalanced?

This might help visualize the relationships present in a dissonance producing situation. From this, a look at the decision to re-examine goal or change methodology and hopefully data could be made. The test should be immediately talked about and tied in. Otherwise, it would only be an exercise in futility.

Support Role in Confrontation

Purpose:

To help participants present ways a group might help in the confrontation process.

Materials:

Newsprint and magic markers.

Participants:

All

Time:

35 minutes.

Agenda:

1. Brainstorm ways a group might support a person who wishes to change methodology or who wishes to change his goal. What should characterize a group which would be supportive? i.e. It should be collaborative rather than authoritative, it should be safe rather than threatening, it should be constructive rather than critical, etc.

2. Have the participants in groups describe the conditions which should be present if self-development through confrontation is going to occur. (Hopefully this list would include assumptions about the individual worth, significance, capacity for good and the ability to help himself.)

Rationale for Confrontation Approach

Purpose:

To help participants find out some of the areas in which change can occur and how change occurs.

Materials:

Handout: "Change--a Model and Strategy"
Handout: "Achieving Change in People"

Participants:

All

Time:

1 hour and 35 minutes.

Agenda:

1. Discuss handout #1.
2. Discuss handout #2.

HANDOUT FOR

Rationale for Confrontation Approach

CHANGE -- A MODEL AND STRATEGY

Change occurs in every institution or organization when analyzing change, a hierarchy appears:

1. It is fairly easy to identify changes in institutional patterns after they have occurred.
2. It is more difficult to analyze changes while they are going on.
3. Still more difficult to predict changes.
4. Still more difficult to influence significantly the direction and tempo of changes already under way.

Model for Thinking About Change -- Kurt Lewin

(A dynamic balance of forces working in opposite directions within the social-psychological space of the institution.)

For Example:

Restraining Forces i.e., (1) A group standard in the production team against rate-busting or eager-beavering by individuals

↓

Present level of Production

↑

Driving Forces i.e., (1) Pressures of supervisors on the work team to be more productive

This balance applies to levels of production but also to:

1. Levels of discrimination in communities
2. Atmosphere of democracy or autocracy in social agencies
3. Supervisor-teacher-pupil relationships in school systems
4. Formal or informal working relationships among levels of a hospital organization

If, for example, a new supervisor who wins the trust and respect of the men is added, the social-psychological space is altered and looks like this:

Restraining Forces i.e., (1) A group standard in the production team against rate-busting or eager-beavering by individuals

↓

Present level of Production ———————————————

↑

Driving Forces i.e., (1) Pressures of supervisors on the work team to produce more

(2) New supervisor who is trusted -- value of trust on the part of the workers

In Change Then, There Occurs:

1. An unfreezing of the existing equilibrium
2. A movement toward a new equilibrium
3. Refreezing of the new equilibrium

Planned Change uses Situational Forces:

1. To accomplish unfreezing
2. To influence the movement in generally desirable directions
3. To rearrange the situation
    a. To avoid return to the old level
    b. To stabilize the change of improvement

Strategies for Change:

1. Increase the driving force (If just this strategy is adopted, tension in the system increases.)
2. Decrease the restraining force
3. Combination of 1 and 2

Why "Backsliding" Occurs:

1. Those affected by the changes may not have participated in the planning enough to internalize the changes that those in authority are seeking to induce.
2. When the pressure of authority is relaxed, there is no pressure from those affected to maintain the change.

3. A change in one part of the social system may not have been accompanied by enough co-relative changes in overlapping parts and sub-systems.

Principles of Strategy for Effecting Institutional Change:

1. To change a sub-system or any part of a sub-system, relevant aspects of the environment must also be changed.

2. To change behavior on any one level of hierarchial organization, it is necessary to achieve complementary and reinforcing changes in organization levels above and below that level.

3. The place to begin change is at those points in the system where some stress and strain exist. Stress may give rise to dissatisfaction with the status quo and thus become a motivating factor for change in the system -- but avoid beginning change at the point of greatest stress.

4. If thorough going changes in a hierarchial structure are desirable or necessary, change should ordinarily start with the policy-making body.

5. Both the formal and the informal organization of an institution must be considered in the planning of any process of change.

6. The effectiveness of a planned change is often directly related to the degree to which members at all levels of an institutional hierarchy take part in the fact-finding and the diagnosing of needed changes and in the formulating and reality testing of goals and programs of change.

Sources

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The Diffusion Documents Center (Michigan State University)*

Sources (con't)

Strategies for Educational Change (Ohio State University)*

National Institute for the Study of Educational Change (Indiana University)*

New York State Department of Education's Center for Innovation*

*Devote major energies to the collation, classification and annotation of change studies.

HANDOUT FOR

Rationale for Confrontation Approach

ACHIEVING CHANGE IN PEOPLE

Applications of Group Dynamics Theory

(A condensation of an article by Dorwin
Cartwright which appeared in Human Relations,
Vol. IV, 1951)

PURPOSE OF PAPER: To examine some implications for social action which stem from research in group dynamics.

I. Definitions:

A. Group dynamics refers to the forces operating in groups.

B. Investigation of group dynamics consists of a study of these forces.

C. Practical application of group dynamics consists of the utilization of knowledge about these forces for the achievement of some purpose.

II. Lewin's heuristic research hypothesizes that "By introducing group forces into the situation, a whole new level of influence has been achieved".

III. Some Principles of Change:

A. Determined by the individual's group memberships:

1. How aggressive or cooperative a person is
2. How much self-respect and self-confidence he has
3. How energetic and productive his work is
4. What he aspires to
5. What he believes to be true and good
6. Whom he loves or hates
7. What beliefs and prejudices he holds

B. Three ways of viewing groups:

*1. Group is a source of influence over its members

a. Support or blocking pressures are given members stemming from the group.

b. Use the group as a medium of change.

*2. Group becomes the target of change -- to change behavior of individuals, it may be necessary to change:

   a. the standards of the group

   b. its style of leadership

   c. its emotional atmosphere

   d. its stratication into cliques and hierarchies

3. Many changes of behavior can be brought about only by the organized efforts of groups as agents of change:

   a. An action group, i.e., a citizens group to increase the pay of teachers

   b. The group's effectiveness depends on:

      1) the way it is organized
      2) the satisfactions it provides to its members
      3) the degree to which its goals are clear, etc.

C. The group as a medium of change:

1. Those people who are to be changed and those who are to exert influence for change must have a strong sense of belonging to the same group.

   a. The gaps between teacher and student can be a real obstacle to acceptance of the advocated conduct.

   b. Create a we-feeling.

2. The more attractive the group is to its members the greater is the influence that the group can exert on its members.

3. In attempts to change attitudes, values, or behavior, the more relevant they are to the basis of attraction to the group, the greater will be the influence that the group can exert upon them:

   a. Explains why a group might have strong discipline over members in some matters and not in others.

*Only these 2 will be considered in the rest of the paper.

    b. Much of the inefficiency of adult education could be reduced if more attention were paid to the need that influence attempts be appropriate to the groups in which they are made.

4. The greater the prestige of a group member in the eyes of the other members, the greater influence he can exert.

5. Efforts to change individuals or subparts of a group which, if successful, would have the result of making them deviate from the norms of the group will encounter strong resistance.

6. Summary:

    a. These principles have readiest application to groups created for the purpose of producing change in people.

    b. They contain specifications for building effective training groups.

    c. They also give more insight into reasons for resistance to change.

D. The group as a target for change:

1. Strong pressure for changes in the group can be established by creating a shared perception by members of the need for change, thus making the source of pressure for change lie within the group.

2. Information leading to the need for change, plans for change must be shared by all relevant people of the group.

3. Changes in one part of a group produce strain in other related parts which can be reduced only by eliminating the change or by bringing about readjustments in the related parts.

Discovery of Self-Confrontation

Purpose:

To involve participants in discovery of the process of self-confrontation in a group setting.

Materials:

A write-up of an outline of the self-confrontation process -- possibly like the following:

A. Give each teacher a goal. He is to take it as if it were his own.

B. Give each observer data which is discrepant with the goal.

C. The SCE asks the teacher to state his initial goal.

D. The SCE requests the data from the observer.

E. The SCE asks the teacher to state how he sees the data in relation to his goal.

For example:

1. Does the data show that the teacher's goal was reached?
2. If not, what does the data show? How close is the teacher actually coming to his declared goal?

F. How could the teacher come closer to that goal in the future?

1. Change in procedure
2. Goal reconsideration

Participants:

All

Time:

1 hour.

Agenda:

1. Participants break into groups of 3.

2. They role-play the self-confrontation session from the outline.

3. Ask participants to discuss some reactions to the experience.

2. Application Activities

Theory on Confrontation

Purpose:

1. To accumulate initial theory about confrontation.
2. To make participants aware of some references.

Materials:

1. Goals and corresponding data which are discrepant.
2. Handouts: "Discussion of Confrontation Theory"
   "Examples of Internal Confrontation"

Participants:

All

Time:

25 minutes.

Agenda:

1. In a group, give one person a goal and data which are discrepant and ask him to talk with the group about what he would do to resolve the differences and how the group might help him.
2. Have the groups list answers to the two (2) questions and pool them to accumulate initial theory about confrontation from the group.
3. Distribute and discuss handouts on confrontation.

HANDOUT FOR

Theory on Confrontation

DISCUSSION OF CONFONRTATION THEORY

"You are stupid". These are the words that come to mind in a situation where change is recommended without recognition of need by the subject of change.

The normal human condition demands a feeling of adequacy or self-worth on the part of the individual. He sees himself as adequate to a situation until threat from another being or failure to perform cause him to question his own performance. Outside questioning can cause resentment or defensive behavior while internal examination can lead to change from within.

It is the function of the outside agent, therefore, to present the need for change in a delicate way -- a way in which the internal confrontation on the part of the subject will be primarily self-directed

Confrontation, therefore, is an internal examination of real behavior in light of his perceived ideal behavior.

What is this ideal behavior?

As an individual, I am unable to feel exactly what another individual feels, I am unable to see exactly what another sees and I am unable to hear exactly what another being hears. How then can I justifiably set objectives for another being?

Confrontation is a questioning of self-performance in light of specific guidelines (ideal behavior, goals). These guidelines are specifically stated definitions of performance accepted by the author of the guideline as evidence of success, they are authored by the person who must subscribe to them, and they may be altered by him if necessary.

If I ask myself about my ideal behavior and compare it to my real behavior, I am confronting myself.

If you tell me I need to change, you may be saying, unintentionally, "You are stupid."

HANDOUT FOR

Theory on Confrontation

EXAMPLES OF INTERNAL CONFRONTATION (field of psychology)

Group dynamics, both as a field of research and theory, is the most viable area in modern psychology. Much has been said about group dynamics and much more needs to be said. Kurt Lewin's theory of group dynamics is a major contribution to the understanding of human behavior.

Within Lewin's field theory is found one of the bases for the confrontation approach. Lewin describes an internal construction "Tension". "Tension", as Lewin uses the term, is the type of "activity" aroused by internal confrontation. Examples of these "tensions" are legion and a number of references are included for the use of the reader.

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Use of Filmed Confrontations

Purpose:

To bring about a simulated confrontation for the participants to react to.

Materials:

1. Prepared 16mm sound films or video tapes (such as XICOM or SRA materials).
2. Projector or video tape recorder.
3. Tape recorder.

Participants:

Trainees and role-players.

Time:

Varies with individuals and the length of the film.

Agenda:

1. Allow people to choose the film that best describes a possible problem that they might encounter, i.e., "the militant parent". After viewing the film, which should bring the viewer to a point in which he will be ready to "take over for the film hero" (principal, teacher, etc.) and act as he would with the role-player acting the part of the militant parent, etc.
2. A tape would be made of the interaction and would be given to the participant to listen to and to decide if he would like to change his behavior. The tape would also be available (if the participant wishes) to the other participants through the search area.
3. A participant would be allowed to replay the film as often as he liked in order to try possible new approaches to the situation.

Role-Play of Confrontation Situations

Purpose:

To give participants practice in recognizing, dealing with and resolving conflict between ideal and actual.

Materials:

Participants would have to decide whether they need any materials.

Participants:

All

Time:

30-45 minutes.

Agenda:

1. Have participants form two separate groups in order to role-play two different situations in which confrontation occurs.
2. After the groups have had a chance to prepare their confrontations, have them present these episodes to each other.
3. The task of the observing group would be to identify the confrontation and to suggest methods of resolution.

Self-Description Questionnaire

Purpose:

To provide an opportunity for a group member to do some assessment of self as to how he sees himself in regard to the stated items. It also provides the opportunity to state what he ideally would like to be. Finally the opportunity to check his own perception of his "real" self with others can provide some important data in relation to how others see him.

Materials:

Copies of the "Self-Description Questionnaire" and pencils.

Participants:

Determined by SCE.

Agenda:

This particular instrument may be used by the SCE in a variety of situations which would or could require the getting out of data about self and others perception.

Some of these situations are:

1. Completion of the questionnaire in terms of how I am compared to how I would like to be.

2. Confrontation of how I am with how others see me.

3. In all cases, discussion of feelings can be included.

HANDOUT FOR

Self-Description Questionnaire

On each of the following pages you are asked to rate several concepts on scales consisting of polarized adjectives. At the top of each page is a particular concept such as "self". Listed vertically on the page are 20 adjectives which describe each of these concepts. Please rate each concept by placing an X at the point on each of the adjective scales which you feel best describes that concept. For example, suppose the concept is yourself. Below are some typical scales on which you can describe yourself:

Cold : : : : X : : : : Warm

Active : : : : : : X : : Passive

etc.

If you see yourself as a person who is neither very warm nor very cold, then you would place an X somewhere near the middle of the scale, as shown above. If you see yourself as a very passive person, then you would place the X toward the passive end of the scale, as shown above.

Please rate each of the following concepts on all of the adjective scales listed.

MYSELF

Active	:	:	:	:	:	:	:	:	Passive
Ineffective	:	:	:	:	:	:	:	:	Effective
Confident	:	:	:	:	:	:	:	:	Not Confident
Helpful	:	:	:	:	:	:	:	:	Unhelpful
Cold	:	:	:	:	:	:	:	:	Warm
Knowledgeable	:	:	:	:	:	:	:	:	Not Knowledgeable
Intuitive	:	:	:	:	:	:	:	:	Not Intuitive
Unoriginal	:	:	:	:	:	:	:	:	Original
Powerless	:	:	:	:	:	:	:	:	Powerful
Uncourageous	:	:	:	:	:	:	:	:	Courageous
Awkward	:	:	:	:	:	:	:	:	Poised
Feeling	:	:	:	:	:	:	:	:	Non-Feeling
Not Insightful	:	:	:	:	:	:	:	:	Insightful
Confronting	:	:	:	:	:	:	:	:	Nonconfronting
Rigid	:	:	:	:	:	:	:	:	Flexible
Non-Controlling	:	:	:	:	:	:	:	:	Controlling
Unresponsive	:	:	:	:	:	:	:	:	Responsive
Good	:	:	:	:	:	:	:	:	Bad
Theoretical	:	:	:	:	:	:	:	:	Practical
Humorous	:	:	:	:	:	:	:	:	Humorless

IDEAL SELF

Active	:	:	:	:	:	:	:	: Passive
Ineffective	:	:	:	:	:	:	:	: Effective
Confident	:	:	:	:	:	:	:	: Not Confident
Helpful	:	:	:	:	:	:	:	: Unhelpful
Cold	:	:	:	:	:	:	:	: Warm
Knowledgeable	:	:	:	:	:	:	:	: Not Knowledgeable
Intuitive	:	:	:	:	:	:	:	: Not Intuitive
Unoriginal	:	:	:	:	:	:	:	: Original
Powerless	:	:	:	:	:	:	:	: Powerful
Uncourageous	:	:	:	:	:	:	:	: Courageous
Awkward	:	:	:	:	:	:	:	: Poised
Feeling	:	:	:	:	:	:	:	: Non-Feeling
Not Insightful	:	:	:	:	:	:	:	: Insightful
Confronting	:	:	:	:	:	:	:	: Nonconfronting
Rigid	:	:	:	:	:	:	:	: Flexible
Non-Controlling	:	:	:	:	:	:	:	: Controlling
Unresponsive	:	:	:	:	:	:	:	: Responsive
Good	:	:	:	:	:	:	:	: Bad
Theoretical	:	:	:	:	:	:	:	: Practical
Humorous	:	:	:	:	:	:	:	: Humorless

Confrontation of Expressed Values with Real Behavior

Purpose:

Activities #1 and #2 are intended to provide experiences which will create an awareness of discrepancies that exist between the individual's professed ideals and his actual behavior.

(It is not uncommon for people to espouse one set of values and live a different - even opposite - set of values. Usually, the person is not aware of the contradiction that may exist between the things he claims to believe and the way he behaves. Such contradictions often are perceived by others as dishonesty, insincerity, etc. Such perceptions are particularly unfortunate when they are held by students of their teachers.)

ACTIVITY #1

Materials:

1. Pencils and paper for participants.
2. Audio-tape recorder and tape.

Participants:

1. As assigned to the program.
2. "Controversial visitor" (Negro, long-haired student, administrator, etc.)

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Present a discussion topic, such as "What are the significant problems that impede racial progress in our society today?" or "What are the implications of male students growing long hair?" or "What are some of the key difficulties administrators pose for teachers in this school system?" and allow the group to discuss the topic (choose your topic on the basis of the available "controversial visitors").
2. Tape record the discussion.

3. After the group has become deeply involved in the discussion and the members have committed themselves, bring the appropriate "controversial visitor" into the group and invite them to include him in the discussion (continue to tape).

4. Allow the discussion to continue for another 10-20 minutes. Then interrrupt the process and ask the group to consider how their discussion changed after the "controversial visitor" joined the group, and Why. Discuss.

5. Play back tape -- (real data) to "check" their perception of how their discussion changed.

ACTIVITY #2

Materials:

Two forms of stub sentences (see activity under OPERATIONAL DESIGN) previously filled out by participants and second group (students, teachers, administrators, or parents, as appropriate) and summarized by question, number and response pattern.

Pencils and paper for participants.

Tape recorder and tapes.

Participants:

As assigned to the program.

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Administer the "stubs" to the program participants at the end of the preceding session (allow 15 minutes).
2. Administer the appropriate "stubs" to a second selected group, appropriate to the needs of the group.
3. Summarize the results of the two administrations in sufficient quantities for the participants.
4. Distribute the summaries at the start of the session and allow the participants fifteen minutes (approximately) to read and compare the two groups.
5. Ask the groups to discuss their reactions to the results of the two forms.

Participants State their Career Goals and Determine Where They are in Relation to Those Goals

Purpose:

This activity is openly intended to deal with self-confrontation. It is designed to get the individual participant to consciously examine his own goals for his professional life, which is not always an easy or comfortable task.

Materials:

Pencils and paper for participants.

Participants:

As assigned to the program.

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Have participants write their major career goals as specifically as they can state them. (What level and kind of achievement do they want to attain in their profession?)

2. Select a volunteer to share his goals with the group and instruct the group to question for understanding and present level of progress toward goal achievement.

External Confrontation Situations Which Lead to Internal Confrontation

Purpose:

Activities #1, #2, #3 and #4 provide "external" situations that may be used as readiness activities for self-confrontation.

(The focus of the training program is upon internal or self-confrontation. However, most external confrontation situations, if they are to be effectively resolved, require self-confrontation. Therefore, one means of attempting to deal with self-confrontation is to use a variety of situations and thus reinforce the habit of self-confrontation.)

ACTIVITY #1

Materials:

Pencils and paperpads for participants, newsprint and newsprint stand.

Participants:

Teachers, administrators, paraprofessionals, etc.

Time:

As scheduled for the specific training program (2 hours minimum requirement).

Agenda:

Variation I: (When the superior is not present as a member of the group)

1. Instruct each participant to design (describe) a situation in which his immediate superior would confront him. The issue should be one in which the participant and his superior have difficulty in reaching agreement or in communicating effectively with each other. He should attempt to describe the situation from the viewpoint of his superior and describe himself as best he can from that viewpoint.

2. Present the situation to the group and discuss. The group should serve as a reality check and help the participant to confront himself regarding his perceptions and his attitudes as manifested in his description of the situation.

Variation II: (When the superior is a member of the group)

1. Instruct each participant to design (describe) a situation in which his immediate superior must confront someone or deal with some problem, which the subordinate feels will be difficult for the superior (but one which he feels resembles "real-life" situation in which the superior is frequently involved). The description should include those ingredients which the participant feels constitute the difficulty which he perceives the superior to have.

2. Participant then to role-play (as the superior) the situation with another member of the group.

3. Superior to react to the role-play and the situation.

4. Group to discuss the situation, the subordinate's perceptions, and the superior's reaction. To help the two confront their own attitudes and perceptions and the effects of their attitudes and perceptions.

ACTIVITY #2

Materials:

1. Tape recorder.
2. Audio-tape of Assistant Principal disciplining student.
3. Pencils and paper for participants, newsprint and newsprint stand.

Participants:

As assigned to the program.

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Introduce audio-tape. Instruct participants to listen for critical incidents within the conversation (areas of mis-communication, differences in attitudes, whether or not they agree or disagree with Assistant Principal, and why?).
2. Play the tape.
3. Have group discuss their reactions to the "confrontation" and analyze their own attitudes, beliefs, modus operandi, etc.

ACTIVITY #3

Materials:

Handout: written role descriptions:

a. Teacher
b. 2 members of grievance committee

Participants:

As assigned to the program.

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Explain role-play procedures.
2. Get volunteers for the three roles.
3. Allow a few minutes for role-players to familiarize themselves with the roles.
4. Conduct role-play (10-15 minutes).
5. Discuss the interactions of the role-players, and how they reacted to the confrontations.
6. Have the role-players discuss feelings when they were confronted by people of the opposite viewpoint.

HANDOUT FOR

Activity #3

ROLE DESCRIPTIONS:

Teacher:

You are a reading teacher. You have applied to use one of your professional visitation days to visit a class of exceptional children. Administration has disapproved your request. You wish to get the grievance committee to support your request.

First Member of Grievance Committee:

You are interested in finding out the "facts" involved in any grievance which you are asked to support. You do not believe that just because a fellow teacher is dissatisfied with something that he is necessarily right. You don't want to support someone if you don't believe in the justice of his demands.

Second Member of Grievance Committee:

You are sick and tired of administration's abusive exercise of its authority. Being a teacher, you have full confidence in the sincerity and capability of your fellow professionals. You know damn well they're not going to bring a grievance to you unless it's legitimate. You feel the full responsibility of your role and will "bend heaven and earth" to protect the rights of your fellow teachers.

ACTIVITY #4

Materials:

1. Tape recorder.
2. Pre-recorded tape of a salary negotiation.
3. Pencils and paper for participants, newsprint and newsprint stand.

Participants:

As assigned to the program.

Time:

As scheduled for the specific program (2 hours required).

Agenda:

1. Introduce the tape situation. Ask the participants to write those items which they feel are essential to the interaction (such as: areas of mis-communication, mis-perception, argreement, etc.).
2. Play the tape (should be no more than 15 minutes in length).
3. Conduct discussion of members' reactions to the situation.

Feelings During Confrontation

Purpose:

To discover feelings participants have in both supportive or non-supportive confrontation situations.

Materials:

One set of goals with discrepant data.

Participants:

All

Time:

45 minutes.

Agenda:

1. Ask a few individuals to be non "supportive" and have these people interact with a person who has goal discrepant data.
2. SCE presents professional with data non-supportive of the goal set.
3. Ask the persons who were trying to resolve the discrepancy how they felt.
4. Next have the same individuals be "supportive".
5. Ask the individuals with discrepant data how they felt this time. (This pattern can be used also for other dichotomies -- authoritative vs. collaborative, safe vs. threatening, constructive vs. critical.)

Individual Self-Confrontation

Purpose:

To let participants practice self-confrontation alone (so he may compare this to working within a group and so he may observe himself resolving differences).

Materials:

Goals for each participant plus corresponding discrepant data.

Participants:

All

Time:

20 minutes.

Agenda:

1. Have a self-confrontation by giving each participant a goal and data and ask him how he would resolve the differences.

2. Have him write how he resolved the differences and then how he feels about the ways he resolved the differences.

Non-Verbal Confrontation

Purpose:

1. To recognize that we often gain feedback non-verbally.
2. To practice changing behavior in accordance with non-verbal signals.

Materials:

Paper and pencils.

Participants:

All

Time:

1 - 1 1/2 hours.

Agenda:

1. Have a volunteer write on paper a goal he would like to achieve with the group in a time limit of 5 to 10 minutes. Do not reveal this to the group.
2. Implement the activity.
3. The volunteer is to discuss the various non-verbal clues and how he reacted to them and why.

   Some areas to discuss are:

   The clues to which he changed his behavior and why.

   The clues that he ignored and didn't change his behavior. Why?

   The clues that he received that encouraged him to continue his behavior.

Alternative #1: Have an observer give feedback on any changes in his behavior due to non-verbal clues.

Alternative #2: Video-tape the session without sound and then replay the tape to observe the non-verbal clues.

Verbalizing Reactions to Confrontation

Purpose:

To explore the feelings of participants following feedback of data in the seminar.

Materials:

None are necessary.

Participants:

Total Group.

Time:

1 hour.

Agenda:

1. Encourage the participant to verbalize his internal reactions to the data presented concerning his real behavior. This can do much toward developing a group awareness of the feeling generated within the individual which may uncover some sharing of similar feelings on the part of the others. It can also be of great assistance in initiating the process of working toward resolution of the conflict.

2. SCE may want to raise specific questions such as:

    How did you feel?
    What did you do?
    What would you like to have done?
    What can the group do to help you?

Practice in Self-Confrontation

Purpose:

To give SCE practice in the self-confrontation process.

Materials:

Case studies of individuals who have a goal and data reported.

Participants:

All

Time:

1 hour.

Agenda:

An SCE could be given a case study of an individual with a delineation of this individual's goal and with the data included. He would be asked to write down or tape his strategy for dealing with this individual. He might go one step further and write or dictate a script which would represent the confrontation. He could bring this back to a larger group and explain why he selected the strategy he did.

Role-Play of Supervisor's Behavior

Purpose:

1. To provide feedback and confrontation to the supervisor (if he is in the seminar).

2. To compare differences in perception (feedback) from different members.

Materials:

Handout of specific problems.

Participants:

All

Time:

1 - 2 hours.

Agenda:

1. Give several members of the group and the supervisor, a specific problem. Tell them they are to role-play the behavior of their supervisor as if he were confronted with this problem.

2. Have the various members and the supervisor present their versions. This could be video-taped for later playback.

3. Have the group discuss the differences that occur in each person's role-playing and the validity of each.

4. Have the supervisor discuss how he felt when confronted with this data. What did he learn? How might he handle this data?

   (NOTE: If the supervisor is easily threatened, this may not be advisable.)

Role-Playing of Team Teaching Situation

Purpose:

To demonstrate examples of external and internal confrontation occuring in a working situation.

Materials:

Newspad and felt markers.

Participants:

All

Time:

1 1/2 hours.

Agenda:

1. Have 3 or 4 people role-play a team planning session where one member is telling everyone how to implement a program and telling everyone what they did wrong (external confrontation). Time limit -- 5-10 minutes.

2. Using the same group, role-play where the group sets goals as a team with mutual agreement and feedback given on performance, only when asked for (internal confrontation).

3. Have the group discuss the differences they saw in the individuals and the group.

4. Have the role-players discuss the differences they felt as individuals.

Effect of a Teacher's Personal Feelings about a Student on Her Grading of That Individual Student

Purpose:

To illustrate the principle of confronting the ideal with the real in the context of achieving the goal of grading students fairly.

Materials:

Pencils and pads of paper.

Participants:

All

Time:

2 hours.

Agenda:

1. Have the participants give grades to their students according to their knowledge of the subject matter. An alternative would be to rank the students from highest to lowest.
2. Have the participants rank their students according to best liked through least liked.
3. Compare the lists.
4. Discuss the feelings that occurred and ways they would or would not like this data presented.

Alternative Strategy:

1. Using the same procedure, compare the ideal and real by using an IPAT or PAPPI test.

    Have the participants set ideal behavior.
    Take the test.
    Compare the results (real) with ideal.
    Discuss feelings and method of presentation.

2. Using the same procedure, compare discrepancies between what a teacher considers her or his best qualities or behavior in a classroom with students' perception.

Role-Play Confrontation

Purpose:

1. To present in a simulated form the type of situation that may present itself in real life.

2. To allow individuals to try, through role-playing, behavior that might not be tried in everyday life.

3. To examine subjective reactions to role-playing and compare these reactions to subjective reactions to real situations.

Materials:

Explanation of situation.

Participants:

A number of people equal to the number involved in the setting.

Time:

Varies

Agenda:

1. Present situation.

2. Ask for volunteers -- many times the situation will arise spontaneously and the people presenting the problem may be productively utilized in the role-play.

3. Role-play a confrontation situation.

4. Examine behaviors exhibited and interaction of others.

5. Examine feelings of those watching.

Present Obviously False Data

(NOTE: when using 2 data collecting devices, tape confrontation and get reaction to tape.)

Purpose:

1. To allow personal examination of reactions to conflicting views of same phenomenon.
2. To allow personal examination of faith in his own resources.
3. To present evidence of need for accurate data collection.

Materials:

1. Tape recorder.
2. Tally sheet (relevant to session to be observed).

Participants:

1. Goal-setter
2. Observer
3. Group members

Time:

30 - 60 minutes.

Agenda:

1. Before confrontation session, ask observer to report obviously false data when reporting findings.
2. During experimental session, a tape recorder or second observer records accurate data.
3. After experimental session, during confrontation session, present false data for participant (goal-setter) to examine.

4. After examination of data and acceptance or rejection has occurred, present the correct data.

5. Discuss feelings of reaction to data (a) false and (b) true and need for accurate data gathering.

Describe Perceptions That Participants Would Not Like Others to Associate With Them as Individuals

Purpose:

1. To bring about internal confrontation.
2. To discuss feelings about internal confrontation.

Materials:

Paper and pencils (enough for all participants).

Participants:

All

Time:

1 1/2 hours.

Agenda:

1. Have participants list potential negative perceptions of themselves.
2. Have participants review these lists and estimate amount of time he might generate these negative perceptions.
3. Discuss group's feelings as they individually worked on items 1 and 2.
4. Discuss how each would feel IF the group were asked to give him feedback.

   And/Or Use a form to collect external data from the group about the "time" estimated in item 2.

IV. RESOURCE-SEARCH METHODOLOGY

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IV. RESOURCE-SEARCH METHODOLOGY

A. Rationale

1. Definition

Resource methodology is used by the leader to provide the professional with substantive input for new behavior.

2. Attitudes, Knowledge, Skills

In order to successfully implement search-resource methodology the leader must possess the following attitudes, knowledge and skills:

The acceptance and understanding of the search-area concept. This includes the provisions for (a) the centralization of materials and equipment; (b) the establishment of the channels necessary for acquisition of other pertinent resources; and (c) the encouragement of contribution of relevant resources by professionals as they are located or developed.

The necessary skills and knowledge to locate, secure, adapt and make available relevant materials and human resources.

The leader should have the skills necessary to encourage professionals to locate and secure resources for their own use as well as for contributions to the search area.

The leader must possess the skills and attitudes necessary to present in a non-authoritarian manner suggestions of possible resources a professional may utilize. These may be information that he possesses or suggestions from other members of the seminar.

The leader should understand and be able to help professionals apply relevant criteria in the selection of an information source to aid in the implementation of a new style of behavior.

3. Why Resource-Search

The self-confrontation by a professional of the discrepancies between his ideal goal and the data of his real performance is basic to the program. However, once this confrontation has occurred, new ideas and information about materials and styles of behavior may be necessary to help the professional resolve this conflict.

It therefore is essential that a leader be able to apply the necessary skills, knowledge and attitudes to aid the professional in the acquisition and final selection of new substantive input that will enable the professional to reach his established goal.

4. Conceptual Presentation

The concept of search-resource methodology will be presented and developed by actual use, simulated exercises, and demonstrations.

a. Development:

The search-area will be explained as to purpose and use by a short informal lecture. This will be followed by a brief tour explaining the location of various materials for professional growth or actual teaching.

The use of search-resource methodology in a seminar will be demonstrated in a role-playing situation.

The development of a non-authoritarian presentation will be developed by several activities such as: (1) comparison of a direct vs. non-direct approach; and (2) brainstorming methods of presentation.

The understanding of selection criteria for appropriate resources will be developed in activities such as force-field analysis of a solution or criteria developed by the group.

The development of sources of information will be developed by the use of materials, brainstorming of sources, and the handout such as a Resource Guide.

The custom designing of a search area for home implementation will be covered in a work session. This will be a plan of action that will include: details as to gaining administrative support; arrangements of securing and classification of materials; furniture and equipment; and time and scheduling.

b. Actual Use:

A search area will be established for use by the participants which will include the centralization and provision of relevant materials, equipment, and the necessary channels to obtain outside resources.

In the establishment of the search area, the following features will be considered:

(1) Establishment of procedure to obtain materials for use elsewhere.

(2) Placement of furniture so as to facilitate reading, writing and group discussions.

(3) Lists of available materials located in the search area.

(4) The availability of duplicating services.

(5) The placement of materials in sections according to subject matter and label accordingly.

The concept of resource-search methodology will be actively practiced by the participant in the seminar situation.

5. Evaluation

Evaluation of resource methodology will occur in 6 ways:

Whether a participant understands and accepts the concept of the search area will be demonstrated by his use of the materials and his actual contributions to the search area.

The search area utilization sheets (see Appendix C) will further reveal his attitudes.

The commitment of a participant to the idea of resources can be measured not only by his use but also by the number of ideas, materials or sources of information he contributes for the use of others.

A practice of new behavior most often results from new information that one obtains.

Therefore, a participant's incorporation of new behavior as a leader, teacher and observer may be a direct result of resources used in a seminar setting or outside of the seminar.

A pre and post general achievement test will be administered which will include items from resource methodology.

The establishment and use of a search area in the on-the-job situation can be used to evaluate the leader's understanding and acceptance of resource methodology.

B. Training Alternatives

1. Conceptualizing Activities

Brainstorm Resource Need Areas and Resources

Purpose:

1. To examine resource needs.
2. To come up with some possible resources.

Materials:

Newsprint, felt pens, and dittos.

Participants:

All

Time:

Varies

Agenda:

1. Select a specific task or problem (this should be closely related to an area that most of the participants deal with).
2. Brainstorm critical areas in which resources would be necessary and record on newsprint.
3. Brainstorm possible resources that could be used in each critical area and record on newsprint.
4. Reproduce on ditto for the participants.

Identify Specialists within the System

Purpose:

In any school system, there are numerous individuals who have highly specialized knowledge, training and experience. Each of these represents a potential resource to the seminar group. However, many of these potential resource people are not readily known to possess special knowledge. Therefore, it is necessary to search out such people within the system and identify their specialties.

Materials:

Flip chart and dittos.

Participants:

Total Group.

Time:

1 hour.

Agenda:

1. Invite the participants to share with the group their own specialties and record on newsprint.
2. Identify those specialists within the system of whom they have knowledge and their specialties.
3. Have each member interview a member of his fellow professionals to determine what special resources they may represent.
4. Reproduce on ditto.

Look to Sources Outside Field of Education (Professional, Publications, Organizations, Finding, etc.)

Purpose:

To find applicable resources outside the field of education.

Materials:

Various periodicals, telephone books, etc., dittos, and handout.

Participants:

All

Time:

3 hours.

Agenda:

1. Distribute handout.
2. Independent study to find an applicable article and list on ditto ways it could relate to education (1/2 hour).
3. Break into small discussion groups of 3-5.
4. Each person presents his article and how it could apply. The group brainstorms additional methods (record on ditto and newsprint).
5. Reproduce all dittos and distribute to the entire group.

HANDOUT FOR

Look to Sources Outside Field of Education (Professional, Publications, Organizations, Finding, etc.)

While there is much meaningful research being conducted in the field of education today, there is and has been for many years, much useful research done in other fields (such as industry) regarding organizational development and change; communication; professional staff selection and development; skills training, etc. A judicious selection of some of the periodicals generated in these many areas can lead to additional resources, concepts and the like, which are frequently highly transferable to the field of education. Some to consider are the Journal of the American Society for Training and Development (ASTD), The Personnel Journal, publications and programs of the Bureau of Industrial Relations (B.I.R.) of the University of Michigan at Ann Arbor, some offerings of the American Management Association (AMA), Sales Meeting Management magazine, to name but a few.

One word of caution is in order. Many organizations are in the habit of reporting on phenomenal innovations within their own organizational structure. It pays to be highly skeptical of self-reported success stories as they frequently lack objectivity yet read quite well to the outsider. It is better to rely on the persons generally accepted to be "objective" in the field, such as Chris Argyris, Keith Davis, George Odiorne (except when he's writing about sensitivity training), Ron Lippett, Bill Haney, and many others who are not married to a particular organization and thus are not as dependent on "success stories" for their survival.

Expansion of Resource List

Purpose:

To help make available as many alternative and relevant resources as possible to help participants link their goals with available materials, theories, research and people.

Materials:

No limitations on this. The only criterion would be one of relevancy.

Participants:

No limitations.

Time:

Within each training program this will and should vary.

Agenda:

Introduction: Expanding a resource list can be done by utilizing the participants' problems and by asking them to expand the list in relation to those problems. The following is an activity which should result in more alternative resources that are relevant to specific problems:

1. Have individuals cite a problem which concerns them.
2. Then have an hour's work in the Search Area to find resources that they think are relevant to finding causes of the problem and solutions for the problem.
3. Have individuals work in diads, each one taking the opportunity to tell the other about what he has located and how what he's found would aid in the analysis of the problem he's concerned with.

4. The members of the diads make lists that look like the following:

   Problem: To find a more popularized view of the process of change while maintaining solid theory.

   Possible Resources:

   a. Lake article in Journal of Applied Behavioral Science

   b. Esalen tapes - C. Rogers on the Change Process

   c. George Leonard articles in Look

5. The problems and resources are given to a secretary, dittoed and redistributed.

Lists-Lists-Lists

Purpose:

To develop a list of resources for a series of problems.

Materials:

Paper, pencils, flip charts (or blackboards), tape, and tape recorder.

Participants:

Total group as long as group does not exceed 20. If greater than 20, make 2 or more groups.

Time:

60 minutes.

Agenda:

1. Have leader guide group in a 15 minute brainstorm of areas that group might like to explore (i.e. for teachers -- independent study, new math, etc; for administrators -- teacher negotiations, inservice, communication with community, etc.).
2. After list of problem areas has been drafted -- have each member list the resources he would go to for each problem and a one-sentence reason for going to that person or material.
3. Collect lists.
4. Duplicate.
5. Distribute to all participants.

Quick Summary

Purpose:

To get participants to think of themselves as resources in a very precise way and to be able to pass this information on to someone else.

Materials:

Rooms to hold group, pencils, paper, flip chart and dry markers.

Participants:

Total Group.

Time:

30 minutes.

Agenda:

1. Have each person think of 5 (or 10) words that best summarize him as a resource person. Have each person write the five words on a piece of paper with his name, etc. Collect paper. Make composite list of names and resources.

2. Have each person pair off with another person in the group for a ten-minute interview.

   The interviewer must then write the 5 or 10 words that best describe the interviewee as a resource for the group and names, etc. Prepare composite list (1).

3. Have each group member go to a person outside of the group to conduct (2). This could be in the community, relatives, etc.

4. Have each group member visit a similar (matched) professional in the area and over lunch or cocktails initiate (3).

Student Brainstorming on Teacher Resources

Purpose:

To obtain the students' suggestions as to the types of resources teachers could use in an effort to increase their effectiveness.

Materials:

Newsprint and marking pens.

Participants:

All

Time:

To be determined.

Agenda:

1. Have students come into the seminar group in a fishbowl situation.
2. Acquaint them with brainstorming ground rules and fishbowl rules, if they have not participated in this activity before.
3. Ask them to brainstorm on all the resources teachers could use in an effort to increase their effectiveness. If teachers have specific goals, students might be asked to brainstorm on resources teachers could use to accomplish these goals.
4. This could be followed up with teachers joining the fishbowl to give additional resource ideas.

Government Documents

Purpose:

To give participants a list of materials that might be relevant for both the educational field and other content areas.

Materials:

Perhaps a handout.

Participants:

All

Time:

Indefinite

Agenda:

Make list available in the Search Area -- also samples of the Monthly Catalog, etc.

Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Printing Office, Washington, D.C. 20402.

For sale at 50¢ a copy. The yearly index appears in the December issue -- this issue varies in price. Subscription is $6.00 per year including the index.

The Monthly Catalog contains each month the following previews:

Abbreviations, Explanation
General Information
How to Order Publications
New Classification Numbers
Corrections for Previous Monthly Catalogs
Classified list of Government Authors
Monthly Catalog

All Governmental departments are listed:
(for example)

- Agriculture
- Atomic Energy Commission
- Congress
  - House of Representatives
  - Senate
- Federal Reserve
- HEW (Health, Education & Welfare)
  - Education Office
- Small Business Administration
- Treasury Department
- Veterans Administration

2. Application Activities

Group Development of Plan for Search Area

Purpose:

1. To encourage consideration of all resources available to in-service leaders.
2. To help participants develop their own resource ideas for use in their home situations.
3. To promote the idea of using people (as well as materials) as resources.
4. To give the staff more ideas on resources they could use.

Materials:

Paper, pencils, handout describing the task and available resources (see attached sample).

Participants:

Total group divided into groups of 3 or 4 people.

Time:

1 to 1 1/2 hours.

Agenda:

1. Tell the participants that each group is a task force responsible for developing the search-resource concept for continuing education in their school district.
2. The group task is to develop a rationale and tentative plan to present to their Board of Education.
3. Hand out task description and give groups a time limit. (Approximately 30 minutes.)

4. Have each group present their rationale and plan to the other groups.

5. Then the total group must decide on one plan that seems most feasible and most relevant to the goals of a continuing education program.

HANDOUT FOR

Group Development of Plan for Search Area

TASK DESCRIPTION

You are a member of a task force that is responsible for developing the "search-resource" concept for continuing education in your school district. At the next meeting of the Board of Education, you are to present your rationale and tentative plan.

Your resources are:

1. $500
2. 1 classroom
3. You may utilize consultants and resource people in your own district and anyone else you can secure.
4. All of the additional services and materials you are able to obtain free of charge.
5. 1 portable video tape set.

Brainstorm Way to Get Help for a Problem

Purpose:

To introduce the concept of examining different types of solutions and the process of selecting one approach.

Materials:

Newsprint pad and magic markers.

Participants:

Total Group.

Time:

2 hours.

Agenda:

1. Have prepared several problems that the group would find typical and unique.
2. Have the group brainstorm either solutions to the problem or sources of help to resolve the problem.
3. Have the group select 1 or 2 best solutions or resources.
4. Do a force-field analysis of the advantages and disadvantages of the solution to decide if it is applicable and feasible.

Student Experts

Purpose:

1. To develop the concept of using people who are knowledgeable to gain input.
2. Many students may have special knowledge in certain areas. They can be of use not only to fellow students but teachers as well.

Materials:

Newsprint, magic markers, dittos.

Participants:

Total Group.

Time:

1/2 hour.

Agenda:

1. Have all the teachers list students who have an above average understanding in certain areas and their expertise.
2. Compile this list and distribute to all teachers and students.

Alternate:

Have students volunteer themselves for areas they consider themselves experts. Compile this list and distribute.

Students' Discussions of Problems with Teacher Reactions

Purpose:

1. To develop materials for a Search Area.
2. To compare teacher and student differences.

Materials:

Video-tape, video-tape equipment (could substitute audio-tape).

Participants:

Total Group.

Time:

4 - 1 hour periods maximum.

Agenda:

1. Present students with a classroom problem.
2. Have them discuss the problem and brainstorm solutions or resources.
3. Repeat 1-2 with teachers.
4. Have the teachers view the students' discussions and solutions or resources.
5. Discussion by the teachers.
6. Select best of students' and teachers' solutions.
7. Do a force-field analysis on the two.

(Note: This would have to be limited in time or it could become very lengthy!)

Activities to Enable Participants to Develop Their own Resources

Purpose:

To enable participants to develop their own resources.

Activity #1:

Consult communication services and businesses (Chamber of Commerce, Elks, etc.).

Activity #2:

Yellow pages -- list all resources that could be called (for example, specific problems -- shop teachers - steel).

Materials:

Phone directory (classified and alphabetical), pencils and paper for participants.

Participants:

As required by program.

Time:

As required by specific program (1-2 hours).

Agenda:

1. Suggest that group consider organizations, businesses, etc., that could be useful as potential resources.

2. Have the members search the directories for organizations that appear relevant and compile a list of those. (Perhaps participants would wish to contact these organizations to determine their willingness to cooperate as resources.)

Brainstorming of New Innovations

Purpose:

1. To exchange new ideas and sources of information.
2. To demonstrate a possible need for more information regarding new ideas and materials.

Materials:

Newsprint, felt tip pens, and dittos.

Participants:

All

Time:

1 hour.

Agenda:

1. Have all participants tell briefly about new practices or materials they have heard of in the last year and cite the sources.
2. Tally how many people in the group either: (a) heard about a specific practice; (b) tried it once; (c) used it in the classroom frequently.
3. Discuss reasons why some ideas were not implemented and others were.
4. Reproduce the charts on newsprint of the new ideas, sources of information, actual use, and reasons for implementation.

Brainstorming of Sources

Purpose:

1. To exchange known sources of information.
2. To think of new alternatives to gain input about new methods and materials.

Materials:

Newsprint, felt tip pens, dittos.

Participants:

All

Time:

2 hours.

Agenda:

1. List all the sources of information about new practices and materials.
2. Tally the group's use of each source. Such as, Never, Sometimes, Frequently.
3. List reasons for an against use of this source.
4. Brainstorm other sources -- such as, outside the field of education.

Resource Guide

Purpose:

To gain additional sources of substantive input.

Materials:

Leader's Guide to Resources, newsprint, felt markers, and dittos.

Participants:

All

Time:

1 hour.

Agenda:

1. Distribute book, giving about 10 minutes to leaf through it.
2. Have members list additional specific Title III projects, persons, local agencies that they know of and have used.
3. Reproduce and distribute to all members.

Research Summaries

Purpose:

1. To examine teaching behavior in terms of research.
2. To present substantive input in a non-threatening manner.

Materials:

Handout from Gage.

Participants:

Two groups.

Time:

1 hour.

Agenda:

1. Distribute Handout, give about 5 minutes to read.
2. Divide into two groups.
3. First group sits in the middle of a fishbowl to discuss the implications for teaching of the summary (10 minutes). (Record on newsprint.) The second group forms a circle on the outside.
4. The groups exchange places and the second group discusses the implication (10 minutes). (Record on newsprint.)
5. The whole group makes one circle and discusses what they observed as members were discussing the summary and why the members may have reacted as they did.
6. Discuss and list the implications of distributing research summaries in a seminar.

HANDOUT FOR

Research Summaries

PATTERNS DERIVED FROM TEACHING TRADITIONS

BY: Norman E. Wallen and
Robert M. W. Travers

Taken From: Gage Handbook for Teachers

Over the years a number of general teaching methods have evolved which imply particular patterns of teacher behavior as well as modifications in objectives and content. Among the best known of these methods are the recitation method (study and recite), the lecture method, the discussion method, the laboratory or project method, and the problem-solving method, as well as the activity method previously considered. With the exception of the comparison of lecture versus discussion methods, which has been the focus of considerable research at the college level, there has been little research on the various methods. The research which has been done has produced results which follow the pattern noted in the activity method studies; i.e., the slight differences found usually favor whatever is designated as the "experimental" method. It is our opinion that lack of specificity of the variables involved has been a major limiting factor in such studies.[1]

The Lecture Method

On first thought, what constitutes the lecture method would appear obvious. One envisions the teacher talking to a group of students, who are presumably listening. On second thought, however, one may note that many variations of the lecture are possible. Many teachers who consider themselves lecturers encourage questions on the part of students, or ask questions themselves. About the most definitive statement one can make about the lecture method is that during most of the time the instructor is "talking to" the students. Evaluation of the lecture method has consisted almost entirely of comparison with the discussion method.

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[1] The reader may wish to refer to the following reviews of teaching methods: Barr (1951); Birney & McKeachie (1955); Eckert (1960); Informal committee appointed by the Progressive Education Association (1941); Jersild, Thorndike, Goldman, and Loftus (1939); Ruja (1953); Stovall (1958); Wingo (1960); and Wispe (1953).

The Discussion Method

Once again, we find no consistent definition of this method either by proponents of the method or in research related to it. As contrasted with the lecture method, a greater degree of active participation (talking) on the part of the students is the salient characteristic. Actual practices may vary from a largely unstructured situation in which the instructor plays a non-committal, mediating role to one in which the instructor asks and answers questions. Varying degrees of student control of class activities are also found. Thus we note that one man's "lecture" may be another man's "discussion".

With these limitations in mind, what does research have to say? With respect to immediate mastery of factual information, most studies find no significant differences between lecture and discussion methods (Asch, 1951; Bane, 1931; Bills, 1952; Carlson, 1953; Casey & Weaver, 1956; Deignan, 1956; Eglash, 1954; Gerberich & Warner, 1936; Haigh & Schmidt, 1956; Husband, 1951; D.M. Johnson & Smith, 1953; Lifson, Rempel, & Johnson, 1956; Maloney, 1956; Slomowitz, 1955; Wispe, 1951; Zeleny, 1940). But a few studies do report differences, usually in favor of the lecture (Burke, 1956; Guetzkow, Kelly, & McKeachie, 1954; Remmers, 1933; Ruja, 1954; R.B. Spence, 1928), but not always (Faw, 1949).

The more important question of retention of material has been seldom investigated. Of three studies which have dealt with this question, two (Bane, 1931; Rickard, 1946) found retention of material to be superior in groups taught by the discussion method and one found no difference (Eglash, 1954). Ward (1956) found greater retention of "understanding-type" learning among students with greater academic ability under discussion procedures but found greater retention of such material under the lecture method with students of lower ability. Further, students of less ability showed greater immediate recall of information under the lecture method whereas the "method" made little difference in such performance on the part of the more able students. It should be noted that all of these studies have been undertaken at the college level.

Inasmuch as proponents of discussion methods have characteristically claimed advantages in problem-solving, application of knowledge, etc., it would seem appropriate to evaluate the method primarily in terms of its success in these areas. There is, however, little direct evidence. Smith (1955) found no difference among three classes differing in degree of "directiveness". There is some evidence of greater acceptance of responsibility for learning on the part of students in discussion classes (Patton, 1955) and some indication of greater use of psychological knowledge (Bovard, 1951; McKeachie, 1954; Perkins, 1950). For a more extensive treatment of these studies and for a review of an "ego-involving" educational program involving group discussion as one aspect (the Pyramid Plan), see pages 427-428, 1139.

Although they focus on aspects of the learning process rather than on "outcomes", the following two studies seem to us particularly interesting. Bloom (1953) played back tapes of classroom activity to groups of college students and asked them to recall what they were thinking about at the time. He found that students in lecture classes as compared to students in discussion classes reported significantly more thoughts classified as "irrelevant" and "simple comprehension", and significantly fewer thoughts classified as relating to "self", "other persons", and "problem-solving". There were no significant differences in "attempts to apply material" or "evaluating and considering meaning". Edmiston and Braddock (1940) had trained observers record the level of attention shown by large sample of secondary school students to nine types of teacher activity. The mean percentage of students attending ranged from 81 per cent for laboratory activities to 88 per cent for student report. Student discussion was 85 per cent and lecture 84 per cent. The most interesting findings are the high percentage paying attention to all "methods" and the slight differences among them. In a related study, Brinkley (1952) asked college students to rate 10 academic activities as to the extent to which they elicited "mental activity". He found great variability among students. He also found that a composite ranking remained much the same for groups of students over a 20-year interval. Group discussion was ranked second and lecture eighth in the composite ranking.

Another purpose for which discussion techniques are advocated is that of changing attitudes, interpersonal relations, and self-concept. There is some evidence, primarily from nonschool settings, that discussion methods are more effective in achieving change on these dimensions (Asch, 1951; Faw, 1949; Levine & Butler, 1952; Lewin, 1958; Radke & Klisurich, 1947). Furthermore, it would appear that such techniques permit types of social learnings not possible in a lecture.

In view of the interest in group procedures in general, we present the major conclusions which we feel derive from a comprehensive review of studies on this topic by Lorge, Fox, Davitz, and Brenner (1958). Several types of groups are distinguished:

1. Interacting, face-to-face group involving discussion. Such groups vary on a continuum from the ad hoc group arbitrarily formed to serve immediate purposes to the "traditioned" group having a defined role and history and presumably a common goal.

2. Noninteracting face-to-face group involving physical meeting but no discussion. An example would be the individual working alone but in the presence of other persons -- as in a highly formalized classroom or study hall.

3. Noninteracting nonface-to-face group involving no meeting and no discussion. An example is the averaging of several individual performances to obtain an average "group" performance. Such groups are of less interest with respect to educational problems but have frequently been studied in other contexts.

A pertinent point raised by the reviewers is that generalizations based on one form of group, e.g., "ad hoc", must be applied with caution to other groups, e.g., "traditioned". The following generalizations are those applying to Groups 1 and 2 above:

1. Judgments based on group consensus are not necessarily more accurate than the average judgment by the individual members of the group but are likely to be so when the material is unfamiliar or there is a great range of individual judgments.

2. Group problem-solving is not necessarily superior to the average solution by the individual members of the group but is likely to be so when individuals are previously familiar with the type of problem and bring with them skills which are pertinent to the problem. Group solutions are likely to be inferior to the best individual solution.

3. The advantage of groups in problem-solving appears to be more in facilitating rejection of incorrect approaches than in providing more approaches to the problem.[2]

---

[2] This generalization may require modification when applied to the particular group activity called "brainstorming", wherein participants are instructed to emit every notion which occurs to them regardless of its apparent merit. Parnes and Meadow (1959) report significantly more "good-quality" ideas pertaining to the solution of the Hanger and Broom problems from the AC test of creativity, which requires subjects to list uses of these objects, from a brainstorming group than from a group required to present only "good" ideas. A study by Taylor, Berry, and Block (1958) suggests, however, that it is the instruction to "let go" and express all ideas which is crucial and that doing so in a group may actually have a deleterious effect on the process.

4. Group interaction is likely to be of most benefit to those persons making poorest individual judgments or solutions to problems.

5. Group superiority, where found, is a function of the quality of the individual contributions of members. It is suggested that group solution to a problem is likely only if at least one individual in the group could have solved the problem alone.

6. If evaluated in terms of man-hours to solution, group process is generally, and often strikingly, less efficient.

7. The mere presence of other persons has an effect on individual performance. The effect appears to be beneficial if the other persons are "working", but deleterious if they are observing the individual or if they constitute an "audience".

8. Group process appears more effective than direct attack in changing expressed attitudes and certain aspects of behavior, e.g., in instituting changes in procedures for rating subordinates.

9. With respect to productivity on routine tasks, such as those assessed in industrial settings, group discussion of changes in procedures, goals, etc., appears markedly superior to arbitrary procedures.

Other Teaching Methods

In addition to the lecture and discussion methods, several other teaching methods should be mentioned. The laboratory method emphasizes direct experience with materials pertinent to the area of study. Thus, it includes "field experience", such as trips to local industries and courts, as well as the more common laboratory techniques associated with science teaching. Present research is of little help in evaluating outcomes of this method. Early research was generally favorable to it (Briggs, et al., 1938). More recent studies at the college level have found the usual contradictory results (Balcziak, 1954; J.R. White, 1945).

The project method has as its predominant characteristic the acceptance of an assignment by the student, who is then free to fulfill the requirements independently, with help from the teacher when necessary. Research evidence, though meager, is not particularly favorable (Goldstein, 1956; Novak, 1958). Once again, however, the principal measuring devices emphasize mastery of facts -- hardly one of the objectives of this method. When devices attempting to measure "scientific attitude," independence of study, etc., have been included, no differences have been found between this and the "lecture" approach (Novak, 1958; Timmel, 1955). Dawson (1956), however, did report superior skills in solving directly related problems. A study by Corman (1957) illuminates the complexities of providing an appropriate amount of guidance.

The recitation method, characterized by assignment, study, and report, was -- according to a study which surveyed teaching practices in 200 secondary school classrooms (Dale & Raths, 1945) -- the most common "method" employed. This method is, in the public schools, considered to be the "traditional method". Thus the method has tended to be the one with which other methods are compared. As has been indicated, there is little experimental support for this method or its competitors as a general teaching method.

Flander's -- Direct vs Indirect Approach

Purpose:

1. To give practice in the use of research summaries to set goals of behavior.
2. To use other people in the seminar to gain a variety of possible strategies to achieve a goal.

Materials:

Handouts from Flanders on Direct and Non-Direct Teaching Behavior, newsprint, felt markers, and dittos.

Participants:

All

Time:

2 hours.

Agenda:

1. Distribute the Flanders research summaries (5 minutes).
2. Discuss the implications of the summary (15 minutes).
3. Brainstorm possible methods to achieve a non-directive approach (30 minutes).
4. Have the group select one or two best approaches (10 minutes).
5. Do a factor analysis on the method selected.

HANDOUT FOR

Flander's -- Direct vs Indirect Approach

INTERACTION ANALYSIS: Theory, Research, and Application

Editors: Amidon-Hough

SUMMARY -- Taken from "The Effects of Direct and Indirect Teacher Influence", p. 216

The primary purpose of the study described here was to determine the effects of direct vs indirect teacher behavior and of clear vs unclear student perception of the learning goal on the achievement of eighth-grade geometry students. A specially trained teacher role-played both a very direct and a very indirect teacher in a laboratory situation involving 140 eighth-grade pupils chosen from a larger population on the basis of high scores on a test of dependancy proneness. All students were randomly assigned to one of the following four experimental treatments; direct teacher influence with clear goals, direct teacher influence with unclear goals, indirect teacher influence with clear goals, and indirect teacher influence with unclear goals.

Students in the various classifications were then compared on the basis of pre- and post-achievement tests in geometry. No differences were found between the clear goal and unclear goal treatments, indicating that in this study, at least, achievement of dependent-prone students was not affected by perception of the learning goal. An analysis of the direct and indirect treatments indicated that the children taught by the indirect teacher learned more than did the children taught by the direct teacher.

The results of this study take on additional meaning when compared with the results of Flanders (1960) using the same experimental design. Flanders found no differences (among the four experimental conditions) on the total group of 560 students who ranged from very high to very low on the dependence scale. Apparently dependent-prone students or students who make average scores on the test for dependence proneness.

HANDOUT FOR

Flander's -- Direct vs Indirect Approach

SUMMARY AND CONCLUSIONS -- Taken from "Teacher Influence, Pupil Attitudes, and Achievement", p. 234

The three major hypotheses were supported by an analysis of data from interaction analysis, attitude, and achievement scores in seventh-grade social studies and eighth-grade mathematics. Teachers who were able to provide flexible patterns of influence, by shifting from indirect to direct with the passage of time, created situations in which students learned more. The students of teachers who were unable to do this learned less.

There seemed to be four essential elements of teacher influence in the classrooms in which achievement and attitudes were superior. First, the teacher was capable of providing a range of roles, spontaneously, that varied from fairly active, dominative supervision, on the one hand, to reflective, discriminating support, on the other hand. The teacher was able not only to achieve compliance but to support and encourage student initiative. Second, the teacher was able to control his own spontaneous behavior so that he could assume one role or another at will. Third, he had sufficient understanding of principles of teacher influence to make possible a logical bridge between his diagnosis of the present situation and the various actions he could take. Fourth, he was a sensitive, objective observer who could make valid diagnoses of current conditions. All of these skills, which seemed to characterize the most successful teachers, were superimposed upon a firm grasp of the subject matter being taught.

Teachers in the studies who failed to approach these requirements appeared to be restricted to a limited number of roles producing a rigid sequence of actions. There was little variation from one classroom situation to the next. In particular, the inability to expand or restrict the freedom of action of the students through one's self-control of verbal influence seemed to characterize the unsuccessful teachers.

All of these conclusions are made from composite bits of teacher behavior for two groups of teachers. They are not conclusions based on the actions of a single teacher in an expanded case study. These generalizations also are restricted by what is best called "the limitations of current practice". Were it possible to give one year's training to a group of currently superior teachers, accentuating their awareness of influence patterns and helping them to develop even more self-control, the performance differences might be increased to become even more striking than those found in the present study.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	T
1	1	1															2
2		3	1	5		1		1			1						12
3		2	13	2		3		2			2						24
4				24						7	2			5			38
5				1	9			1					1				12
6	1			2		60						1				1	65
7				1			4	1		1							7
8				1				11				1	1	1		1	16
9																	0
10		5	4				3			21							33
11			5							1	18		2				26
12			1		3							9					13
13				1							2	2	17				22
14		1		1						3	1			10			16
15																	0
16						1							1			2	4
T	2	12	24	38	12	65	7	16	0	33	26	13	22	16	0	4	290
%	0.7	4.1	8.2	13.1	4.1	22.4	2.4	5.6	0	11.4	8.9	4.5	7.6	5.6	0	1.4	100

I.D. $\frac{88}{88} = [1.00]$ S.T. $\frac{72}{176} = [0.41]$ SiTo $\frac{38}{248} = [0.15]$

FIGURE 2-4.

When the Observational System for Instructional Analysis is used, observations are plotted into the matrix in the same fashion in which they are plotted into the matrix used with the Flanders System. Category numbers are paired in such a way that any number, with the exception of the first and last numbers, always appears in two pairs, first as the second number of a pair and then as the first number of a pair. The first number of any pair refers to the row in the matrix into which it will be plotted, and the second number refers to the column. Tabulation always arbitrarily starts and ends with the number 16. In this way the column and row tallies of the matrix always balance if the plotting of the matrix has been accurate. Figures 2-3 and 2-4 show the tabulation for a short guided discovery lesson, and the matrix built from this tabulation. The first tally mark put into the matrix was put in the 16-6 cell, the second tally mark was put in the 6-6 cell and so on until all of the pairs of numbers had been used. The last tally mark was put into the 6-16 cell.

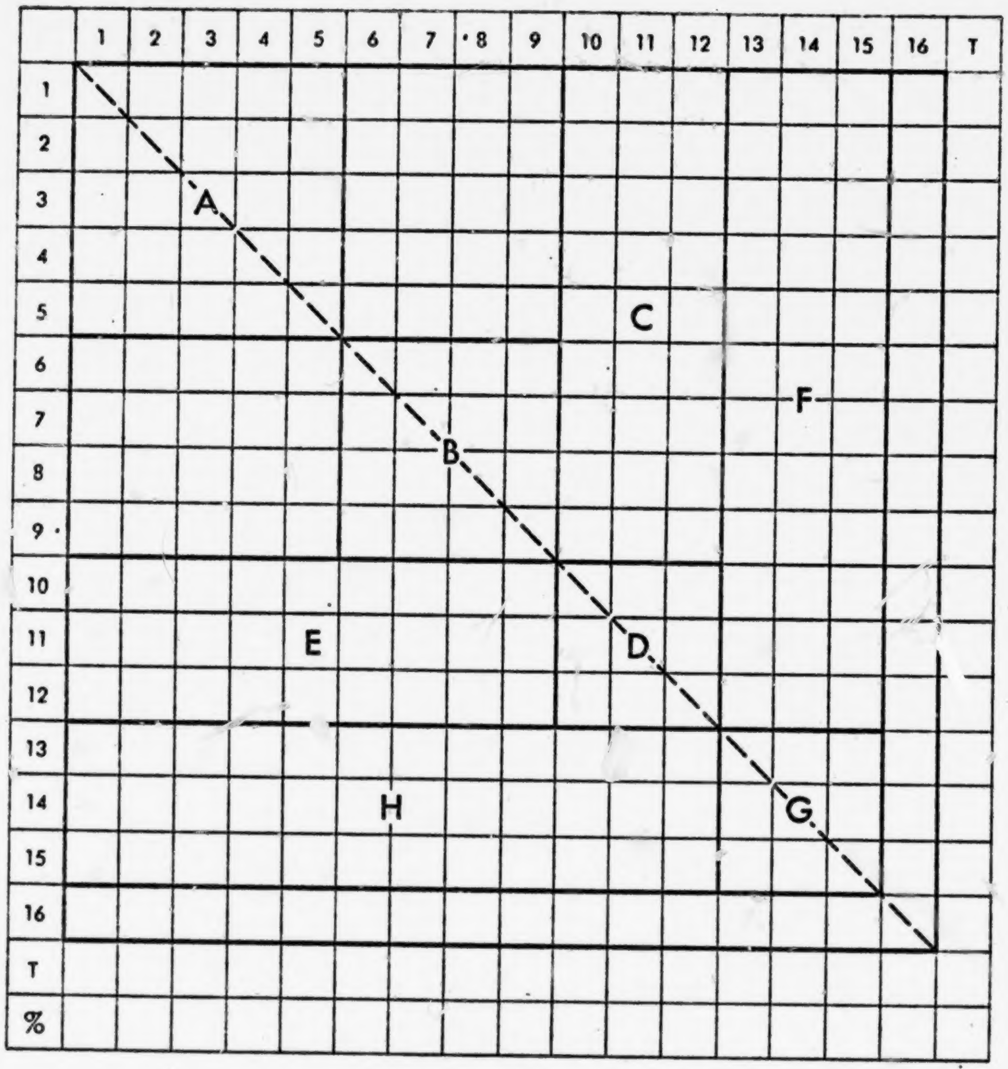

FIGURE 2–5.

When the matrix is plotted, columns and rows are totaled and the percentage for each category is computed. To analyze teacher use of direct and indirect verbal behavior, for example, one would compute the I/D ratio by dividing the sum of the indirect column totals (columns 1 through 5) by the sum of the direct column totals (columns 6 through 9). Similar analyses of verbal patterns may be obtained by computing the ratio of student talk to teacher talk (the S/T ratio) or the ratio of talk to silence (the Si/Ta ratio).

The completed matrix may be analyzed to show patterns of interaction in the classroom. Such an analysis is aided by identifying areas of the matrix which contain common elements. Listed below are the descriptions of areas of the matrix shown in Fig. 2-5.

Area A: Contains all instances of extended indirect influence. For example, when a teacher uses extended praise or extended acceptance, tally marks will be plotted into this area, as will instances of transition from one indirect category to another, e.g., shifts from answering student question to praise.

Area B: Contains all instances of extended direct influence. For example, when a teacher uses extended lecture or extended directions, tally marks will be plotted in this area, as will instances of transition from one direct category to another, e.g., shifts from lecture to criticism of student behavior.

Area C: Contains all instances of student talk following teacher talk. All cells in area C are transition cells; that is, they indicate the beginning of student talk following teacher talk. For example, when a student responds to a teacher's question, the beginning of such a response would be entered in this area, as would student responses to directions or corrective feedback.

Area D: Contains all instances of extended student talk. For example, when a student continues to talk for an extended period of time, tally marks will be plotted in this area, as will all instances of transition from one student-talk category to another, e.g., shifts from an emitted response to asking the teacher a question.

Area E: Contains all instances of teacher talk following student talk. All cells in area E are transition cells; that is, they indicate the beginning of teacher talk following student talk. For example, if a teacher praised a student's answer, the information would be entered in this area, as it would in the case of teacher criticism or acceptance of student responses.

Area F: Contains all instances of silence following either teacher or student talk. All cells in area F are transition cells; that is, they indicate the beginning of periods of silence following talk.

Area G: Contains all instances of extended silence. For example, if a teacher tells the class to think about something for a few minutes, their silence would be indicated in Area G.

Area H: Contains all instances of teacher or student talk following silence. For example, a teacher has asked a question which has been followed by silence. He repeats the question, and the initiation of the second question, following the silence, is plotted in Area H.

Resolving Conflict Between Ideal and Real Behavior by Use of Resource-Search Methodology

Purpose:

1. To give practice in using resource methodology in a seminar.

2. To establish the concept of using others to gain substantive input.

Materials:

Handout, newsprint, and felt pens.

Participants:

All

Time:

1 1/2 hours.

Agenda:

1. Distribute a handout describing a problem that would be relevant to the group, i.e. teachers, administrators, students, etc. Include original goal, data collected and how the person feels. (5 minutes).

2. At this point, the described situation could be role-played with a leader and a seminar participant. (15 minutes).

3. Have the group suggest various alternative behaviors or sources of information that might help the person resolve the conflict. (30 minutes).

4. The leader should be careful not to place any value on the suggested methods and should discourage group members from making the selection for the individual.

5. Have the participant make the final selection and tell reasons why. (10 minutes).
6. The group should discuss the group process.
7. List the behaviors of a leader and group that would encourage the participant with the discrepancies to make a self-selection of a new approach. (30 minutes).

Force-Field Analysis of Selection

Purpose:

1. To give practice in selection of a particular resource.

2. To establish criteria for appropriateness of use.

Materials:

Newsprint, felt pens, and handout.

Participants:

All

Time:

2 hours.

Agenda:

1. Present two teaching alternatives to use in order to resolve a conflict between the ideal and real.

   (NOTE: This could be a continuation of exercise, "Resolving Conflict Between Real and Ideal Behavior," taking several alternatives presented and using these alternatives.)

2. Do a factor analysis of both alternatives.

3. From the two charts constructed, have the group come up with several criteria that are of importance to consider in the final selection of a strategy.

HANDOUT FOR

Force-Field Analysis of Selection

PROBLEM:

A sixth grade science teacher has set a goal: each student should be actively involved twice a week for at least 15 minutes in conducting and completing an experiment of his choice which is shown to the teacher when finished.

However, the data shows that he spent 45 minutes lecturing -- leaving only 15 minutes for the students. This resulted in confusion because of time needed for dissemination and clean up.

The teacher, however, feels it necessary to impress upon the students the caution that must be made with chemicals; thus he does not want to save time by cleaning up and disseminating materials himself.

TWO GROUP SUGGESTIONS:

The group made many suggestions, but the teacher has narrowed it to the following:

1. Each child is to have a written plan of action handed in the day before: including the goal, materials needed, and steps to take. This is reviewed by the teacher who holds individual conferences as needed. Thus the period is divided into 1/2 hour blocks. The first half for experimentation and the second half in planning of the next experiment.
2. The use of the PSSC materials -- see attached sheet, which consists of specific units.

HANDOUT FOR

Force-Field Analysis of Selection

ELEMENTARY SCIENCE STUDY

Director: Randolph R. Brown

Principal financial support from: National Science Foundation,
Sloan Foundation, and
Victoria Foundation

This project, inspired as were many others by PSSC, began on a small scale in 1960 and has now grown into one of EDC's largest projects. The purpose of ESS is to develop materials for the teaching of science in the elementary school, from kindergarten through the eighth grade. It has a large and experienced staff and uses the talents of many biologists, physicists, mathematicians, engineers, and teachers drawn from every level of public and private education.

In contrast to EDC's curriculum projects for the high school and junior high school, which produce structured and complete courses of study, ESS aims to supply a variety of self-contained units to be used anywhere in the elementary school years when and how a teacher pleases. Some units -- such as Peas and Particles, Mealworms, Light and Shadows, Mystery Powders, Pond Water -- are simple and require little equipment. Other units -- such as Kitchen Physics, Gases and Airs, and Batteries and Bulbs -- are comprehensive and elaborate, requiring a substantial amount of equipment and classroom time (seven to ten weeks).

Anyone who supposes that EDC has a philosophical or pedagogical party line has only to note how ESS shuns the neatly packaged curriculum and the detailed teaching guide; it frankly prefers a permissive, flexible, even intuitive approach in the elementary school. Its choice of topics, for example, depends more on its staff interests and actual classroom experience than on any over-riding scheme of elementary education. Its greatest successes so far have been in the exploitation of a particular object, substance, or event, not in the fitting of units into a pre-established curriculum plan. Units fashioned out of abstractions, no matter how attractive they may seem to adults, are difficult to translate into activities for children. Thus ESS likes to deal with such matters as the behavior of liquids, the growth of mold, or with the patterning and grouping of blocks, but has trouble with the concept of force or the existence of atoms or molecules.

This predilection for the concrete that characterizes the ESS project often puts it at odds with educational groups or organizations that regard the definition of concepts and themes as the sine qua non of curriculum design. They would have ESS teach ideas; ESS would rather teach things. They would have ESS teach that living forms are orderly and complex, that matter is electrical in nature, or that energy is conserved; but ESS finds it more profitable to help children explore the hatching and growth of tadpoles, the habits of mealworms, and the ways of lighting bulbs with batteries. ESS wants students to grow to enjoy the world about them, delight in paradox, savor contrasts, be conscious of textures and patterns, and perhaps find complex ideas in simple events. "Great questions," as George Wald once observed, "are the questions...children ask." ESS feels that "things" encourage children to ask great questions and find their own answers.

Nor does ESS make dogmatic assumptions about how a given unit should be taught. ESS prefers to encourage teachers to explore the possibilities of different sequences of units, different sequences of activities within a unit, and different commitments of time to both units and activities. Diverse though the ESS staff is in many of its views, it is united in the belief that teachers and administrators themselves must decide how they wish to manage their classrooms and curricula. ESS sees its job as one of opening up and expanding the options for schools, not of prescribing a curriculum, defining procedures, enumerating carefully designed goals, or talking excessively about "correct" classroom management.

At the same time, ESS recognizes its obligation to help teachers and administrators develop coherent programs that they, not ESS, think are good. To that end ESS regularly invites science consultants, curriculum specialists, and school administrators to EDC headquarters where they get an intensive exposure to ESS and discuss with the staff and with one another the multitudinous problems that must be considered as they prepare to make major changes in their schools. In the summer of 1968, ESS will also conduct two-week and four-week workshops in a dozen places across the country.

The past year at ESS has brought an increasing awareness to the staff of how severely general school problems, in their great complexity, limit the effectiveness of new instructional materials. It has been the increasing availability of ESS materials that has revealed many schools to be poorly prepared to undertake fundamental changes in curriculum, administration, and classroom practices -- changes that are implicit in ESS units. In spite of these serious problems of implementation, the ESS project continues to regard the development and production of new units as its primary business.

But it also continues to worry about another problem that is common to curriculum development projects: the fact that it reaches only a tiny fraction of teachers now in the elementary schools. ESS is particularly conscious of the need to devise ways of influencing teachers and teacher-training programs on a scale that is orders of magnitude greater than at present. The production of curriculum materials, after all, is only part of the job that needs to be done.

The first ESS materials, after years of development and tryouts, reached the general school market in the 1966-67 academic year, and fourteen units are now commercially available. Fourteen additional units are now in commercial preparation by McGraw-Hill, and forty-two more are in various stages of development at ESS.

Alteration of Unsuitable Resource

Purpose:

1. To examine resources in terms of suitability, feasibility, time spent in implementation and learning.
2. To give practice in altering a resource so as to be applicable to a specific problem.

Materials:

Newsprint, felt pens, handout, and dittos.

Participants:

All

Time:

1 1/2 hour.

Agenda:

1. Present a handout of a conflict between ideal and real including the selection of a resource that needs modifying. (10 minutes)
2. Have the group rate the resource excellent, good, poor, using the examination criteria of (1) suitability for selected population; (2) feasibility, (i.e., cost, availability of materials, administrative o.k., etc.); and (3) time necessary to learn how to use the materials and the approach.

   (NOTE: The group may want to devise their own examination criteria or use the ones developed in the exercise on the Force-field. (15 minutes))
3. In terms of the examination criteria ratings, have the group suggest alterations that could be made in order for the resource to be successfully implemented. (1 hour -- type on ditto and distribute.)

Fishbowl of Resource

Purpose:

1. To give practice in a method to present resources in a non-authoritarian manner.
2. To give practice in using people as resources.

Materials:

Newsprint, felt pens.

Participants:

All -- with an investigating committee.

Time:

2 - 1 1/2 hour periods.

Agenda:

PART I

1. Brainstorm of new innovations or approaches individuals are interested in learning more about.
2. The group selects the one idea they as a group would like to know more about.
3. The group selects a committee of 3 or 4 to do research of the innovation. If, however, there are several knowledgeable people in the group -- it may be possible to "pick their brains" rather than take time for a committee to conduct outside research.

PART II

4. The committee sits in a circle in the middle of an outer circle where the other participants are seated. There are included several empty chairs where members from the outer circle may sit when they have questions or comments to contribute.

5. The committee describes the components of the innovation and discusses the implementation of this program.

6. The group discusses how they felt about this manner of presentation and whether they were interested or would try to implement this innovation.

Resource Methodology Presentation

Purpose:

1. To examine various methods of presenting substantive input in a seminar.
2. To examine these methods in terms of internal or external changes.
3. To examine the relationships between external-authoritarian presentations and internal-non-directive approach.

Materials:

Newsprint, felt pens, and dittos.

Participants:

All

Time:

2 hours.

Agenda:

1. Brainstorm various ways to present new ideas in a seminar setting.
2. Rate the ideas as to causing external or internal change.

External Great	Some	None	Internal Great	Some	None

3. Have the group decide by voting whether the method of presentation is authoritarian or non-directive.

4. Discuss the relationship between the manner of presentation and the type of changes in behavior.

5. Type on ditto and distribute.

METHOD	TYPE OF PRESENTATION		TYPE OF CHANGE					
			Internal			External		
	Authoritarian	Non-directive	Great	Some	None	Great	Some	None

Two Conflicting Videos of Resource-Search Presentation

Purpose:

To examine the difference in behavior and reactions to a leader that occur in a seminar when substantive input is presented in an authoritarian manner and a non-directive manner.

Materials:

Video or audio tapes, newsprint, and felt pens.

Participants:

All

Time:

1 1/2 hour.

Agenda:

1. Present two 15 minute video or audio tapes, or have role-play of a leader helping a professional resolve a conflict between ideal and real behavior by using resource-search methodology. One method being a direct-authoritarian approach (this is the way to solve your problems). The other tape will be in a non-directive approach where several members of the seminar present ideas, the professional discusses the advantages and disadvantages, and makes the selection of a new behavior or materials himself. Use the same conflict situation.

2. Have the group discuss and list on newsprint the differences that occur in the behavior, attention, and involvement of the professional, the other seminar members, and leader in the two tapes.

3. Place the differences listed on ditto and distribute to the group.

Factor Analysis of the Establishment of a Search Area

Purpose:

1. To examine some of the possible negative factors in the establishment of a search area.
2. To brainstorm ways in which these handicaps can be altered.

Materials:

Newsprint, felt pens, dittos, and handout on search area.

Participants:

All

Time:

1 hour and 15 minutes.

Agenda:

1. Hand out a brief description of the search-area concept.
2. Have the group list the advantages and disadvantages of the search-area concept.
3. Have the group brainstorm ways to improve the concept and to change the negative factors.
4. Place on ditto and distribute.

Non-Use of Search Area

Purpose:

1. To examine problems that may arise in encouraging use of the search area by participants.
2. To brainstorm methods of avoiding or eliminating non-use.

Materials:

Newsprint, felt pens, and dittos.

Participants:

All

Time:

1 hour.

Agenda:

1. The group will brainstorm as many reasons as they can think of that the resource-search center would not be used. These will be placed on newsprint.
2. Divide into small groups to go back over the list and suggest methods that could be used to eliminate these problems.
3. Compile the lists and place on ditto.

Encouraging Contribution to the Search Area

Purpose:

1. To introduce the idea that an inherent part of the search-area concept is the contribution of materials and ideas by the participants.

2. To devise ways to encourage contributions to the search area.

Materials:

4 newsprint pads, 4 felt pens, and dittos.

Participants:

All - 4 groups.

Time:

1 1/2 hour.

Agenda:

1. Divide into 4 groups to brainstorm methods to encourage contributions of materials, ideas, new sources, etc., to the search area by seminar members. (1/2 hour)

2. Each group will select one method to present to the group in a fishbowl with an open chair for members of the other groups to ask questions or make comments. (15 minutes per group)

3. Place all ideas on ditto and distribute.

Design of a Search Area

Purpose:

1. To give practice in the custom-designing of a search area to be implemented in a home situation.
2. To gain feedback and suggestions on the design.

Materials:

Dittos

Participants:

All - 6 groups.

Time:

3 hours.

Agenda:

1. Each participant will write on ditto his design of a search area for implementation in the homework situation.
2. The participants will be divided into 6 groups. Each member will distribute to the other members copies of his design.
3. Each group will spend 30 minutes talking about each members' design. Ten minutes will be spent in asking questions about the design or home situation that needs clarification. Twenty minutes will be spent in discussing the design and making additions, alternatives or suggestions. These suggestions will be written at the bottom of the design.
4. Each member's design and the group's suggestions will be dittod and distributed to all members.